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THE RAILROAD MAN'S MAGAZINE

TROLLEY PASSENGERS WHO DON'T PAY

MAY

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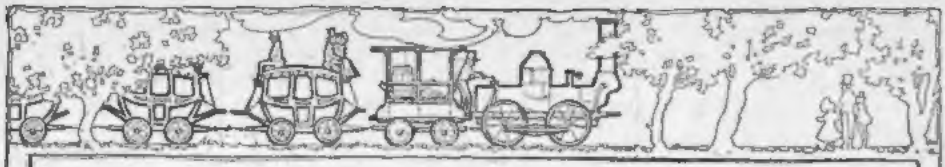

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THE RAILROAD MAN'S MAGAZINE

Vol. VIII. MAY, 1909. No. 4.

Trolley Passengers Who Don't Pay.

BY ARTHUR B. REEVE.

WHAT is the charm in beating a street-car company out of five cents? You don't know? Of course not; we didn't suppose that you did. But you've heard of people trying it, haven't you? Perfectly respectable people, too, who would think twice before robbing a bank or committing even quite justifiable homicide.

Probably it's because the sum is so small and the street-car company so rich and—anyway, what are the odds? A nickel is small, but multiply it by a few thousand or hundred thousand, and it's surprising how soon it grows great and multiplies. And even the richest company would soon feel the shrinkage in its cash-drawer if every twentieth, or even every hundredth, person that rode in its cars omitted or refused to pay his fare. Which is not so far from what actually happens on more than one line.

Ways That Are Dark and Tricks That Are Not Always Vain by Which Street-Car Companies Are Made To Practise Unwilling Charity.

"WHY, you'd try to have your son ride for half-fare if he wore whiskers," says one character in a recent play to another, making a general indictment of the attitude of a large section of the public toward street-railway companies—an attitude, by the way, that prompted a rather spectacular receiver of one of the traction companies recently to place in his cars this neatly framed sign:

THOU SHALT NOT STEAL.

Like many other things, there is some truth in this joke, too. People who wouldn't think of carrying off a pin that didn't belong to them, will take pride in

swindling a street-car company out of a nickel, or even a fraction of a nickel. They will resort to the most ingenious and sometimes really artistic subterfuges in order to ride without paying.

Some of the methods must have taken time and gray matter to devise sufficient to save dollars for the inventors in their business where they save dimes in this manner. Of course this is not true of all people, or even of a large minority, but once in a while you find this dishonesty cropping out in the most unexpected places, along with the idea that anything is legitimate in beating the company. People will go out of their way to save a nickel and then cheerfully squander a dollar.

A conductor on an East Side street-car line in New York once walked down the center of the car to collect the fares of two women and a boy who had just got on. As it happened, he had noticed the boy, who was big enough to have gone to work without exciting any suspicion that he was violating the child labor laws.

But, presto! when the conductor came to collect the fares a little shaver was there who looked scarcely four years old —as far as height went—standing between his mother and aunt. The two women tendered a dime, but the conductor ungallantly demanded fifteen cents. Of course an argument followed, but the conductor stuck to his first impression.

"Make him stand in the middle of the

THEY HAD COVERED MOST OF HIM, INCLUDING HIS FEET, WITH THEIR SKIRTS, AND, BEING LARGE WOMEN, THEY HAD LOPPED AT LEAST SEVEN YEARS FROM HIS AGE.

car; I want to get a good look at him," he said.

The women were all volubility, but the conductor was obdurate and carried his point, and the boy hobbled out on his knees. They had made him kneel on the floor between them. Then they had covered most of him, including his feet, with their skirts, and, being large women, they had lopped at least seven years from his age.

Most of the methods are not as ingenious as that, for most people can think of nothing better than to look blankly out of the window or assume intense interest in a newspaper as soon as a voice in their neighborhood says: "Fares, please!" A street railroad official told me that he had often observed people deliberately waiting for a crowded car and letting empty ones go past, so that they would have a better chance of being overlooked and riding free. Of course, many of these people have the nickel ready and would pay if asked as soon as they got on, but after they have gone a few blocks the nickel is safe.

"PAY HIS FARE IN A HURRY, ASK FOR A TRANSFER, AND BEFORE THE CAR HAD STARTED HE WAS INSIDE AND HAD HANDED THE TRANSFER OUT THROUGH AN OPEN WINDOW TO ANOTHER MAN."

So it is possible on a line where there is heavy travel to ride daily and hardly ever pay a fare. Some people have even tried to beat the "pay-as-you-enter" cars by crowding in, but that is next to impossible. These cars are about the last word in compulsory honesty.

On some lines the conductors on the old-style cars come to know the faces of those who beat them, and always insist on being paid. Another stunt is to get on the wrong, or inside, step, or even on the back fender and hop off if asked for the fare.

This story is told by an editor. A car was coming down Broadway when, among others, a flashily dressed woman got on. A few blocks farther down the conductor asked her for her fare, the car being fairly crowded.

"I gave you my fare at —th Street," she snapped, doubling the number of the street where she really got on.

The conductor said nothing and walked back to the platform. The editor asked why he didn't get the fare.

"Oh," he said wearily, "I know the breed. If I had insisted on it, she'd have filled the car with blue flashes like blowing out a fuse. What's the use?"

And a street railway official to whom the story was told backed him up. "Yes, he technically violated the rules," he said, "but what's the use of annoying all the other passengers?"

Then there is the other side of it—as, for instance, when two angel-faced boys with one fare between them will appeal to the sympathy of the conductor and so,

both going and coming, save enough for a soda apiece—buying the soda, maybe, at a drug-store with this sign out: "Your transfer holds good. Stop and try our delicious soda."

As Between the Sexes.

"I always thought women were more honest than men," said another official, "until I got into this business. Now I confess I don't know."

Then he told this story. His wife had recently gone to a fashionable milliner's, down-town. She was surprised when one of the assistants asked her if she'd like to have a transfer, and said yes, just to see what would happen.

Then she learned that customers coming from one direction left their transfers and got transfers in the return direction which had been left by others. Here was a place where they were paying from ten to fifty dollars for hats—and saving five cents, a great bargain!

Another official on this particular line one night overheard how one woman shopped, visited her daughter, shopped some more, returned home, and gave the last transfer to a neighbor to use that night. Then he set his brain working, and now you can get only three rides on that line for a nickel.

Diogenes with his lantern would have a tough time finding his affinity among those who consider transfers legitimate prey.

"You think you are on to all the games," said one of the men in the operating department, "but you pretty soon find out you aren't. Why, I once saw a man get on a car at a crowded transfer point, pay his fare in a hurry, ask for a transfer, and before the car had started he was inside and had handed the transfer out through an open window to another man who rode off across town on the intersecting line."

The worst offenders are the delivery boys of mercantile houses. They never fail to get a transfer wherever they go. Then at the office they pool them, and those who have ridden in one direction will get from others transfers that will carry them back again, and *vice versa*.

People will pick transfers up from the gutters at the corner and carefully smooth them out. Boys will hop on open cars and ask the passengers for their transfers, and sometimes get them. Newsboys will sell them with papers for an extra cent, bartenders will give them with drinks, bootblacks with a shine. That is really a misdemeanor, and every now and then some one is fined for it. Pickpockets have lifted them wholesale by the pack from the conductors.

Often office-boys receive ten cents for an errand. By buying two transfers for a cent apiece they can save eight cents, which is worth while for a boy—and even for some men. People used to ask for a second transfer when the conductor went by, but that was broken up by making a rule that none would be issued unless asked for when the fare was paid.

In some cities, where transfers are given by a man standing on a street corner, people will run down back of a car, and when it stops will emerge innocently from behind with the crowd getting off and so get transfers. In one Middle Western city this got to be so common that the cash fares dwindled to a sad point.

In one of the largest department-stores of New York a floor-walker once ran a regular transfer clearing-house. In order to have the morning transfers good for the afternoon he would send the boys out at noon to use the transfers, secure new ones, ride a few blocks and walk back. He had several score employees under him, and after all the transfers were sorted out, almost everybody could be accommodated going home that night out of the proceeds of the transfers they had obtained coming to work in the morning. The street-car company caught on finally, however, and put a stop to the practise.

Not Always the Impecunious.

Even salesmen who ride a great deal about the city have the system down pat, and are able to ride all day for ten or fifteen cents. As it is a poor rule that does not work both ways, they put in a slip for car fare when they get back to the office. Street-car company and firm both lose.

One company tried having the time-limit section of the morning transfer slip

printed on a white background; for the afternoon and evening it was printed on a black background. One day a woman, well dressed with expensive furs and other things in keeping with them, came back at the company with the black background of the transfer of the day before neatly pasted to a transfer of that morning, from which the white time-limit had been carefully cut.

It is not always those who need the money who resort to these tricks. Once, several bankers were discussing the tipping evil.

"I've got the greatest scheme out," one said proudly. "Whenever I get on a car I get a transfer. Then I give it to the waiter, the elevator man, the bootblack, or the barber. The bell-boy at my hotel thinks I sure am the goods. I always have one for him.

"They think lots more of a transfer than of the real nickel. That's human nature."

NEWSBOYS HAVE BEEN KNOWN TO SELL STREET-CAR TRANSFERS WITH PAPERS FOR AN EXTRA CENT, THEREBY RUNNING THE RISK OF PUNISHMENT FOR A MISDEMEANOR.

A clever transfer stunt is often worked by several Italians, or others who travel in groups to and from work. They will get on a car and some will sit on one side, some on the other. The conductor passes down one side, collects the fares, and the men ask for transfers. Then, perhaps the trolley-pole flies off, or he

has to leave to help a woman on, or something of that sort happens.

Quick as a flash the transfers are passed to those who haven't paid yet. Then he comes back and resumes his collecting. Coming back on the other side of the car he reaches those who have not paid.

"We paid yer once; what d'yer want?" and out come the transfers. As for the other passengers, if they see it at all, they take it as a good joke on the company and let it go at that.

Another method is to argue about the transfer, asserting with extreme politeness that it *must* be good—until the person has reached his destination. "The nickel is nothing to me; it's the principle of the thing," says the hamtrotter—but it is usually noticed that he takes the old transfer with him when he gets off.

One of the prize stunts was devised by an East Side police-court lawyer for a client of his who was a paper-hanger and couldn't afford a delivery wagon. The conductors wouldn't let him ride with pots of paste, brushes, and rolls of paper, but the lawyer said that a transfer was a contract that must be executed. Therefore, while the conductor was within his rights in refusing to accept a five-cent cash fare from the paper-hanger, he was obliged to accept the transfer.

Beating the Ticket-Box.

The procedure was to pay the fare without carrying the paraphernalia, get a transfer, come back, and get the paste and other things, then go to the nearest transfer point on foot—and the law would do the rest. It was upheld, too.

On the Subway and Elevated, where people have to buy tickets and then deposit them in a box, presided over by a ticket-chopper, there is an entirely different system of petty peculation. The favorite practise of the "kikes," as the guards in the Subway call them, is expressively known as "running the box."

This consists in getting in a crowd at a very congested station and making a motion as though depositing a ticket when in reality no ticket is dropped in the box. This is more easily done when a train is just on the point of pulling out and every one is in a wild scramble.

It's sometimes hard to pick the man who actually didn't drop his ticket in the box, and so he gets by. Or it may be impossible to stop him after he has been picked. Most often he is caught and is either indignant or sheepish, according to his temperament.

"Running the gate," or coming in by the open exit, is much easier to detect. Sometimes two will work the game, one "running the gate" simultaneously with the other "running the box"—a sort of "double steal," as in baseball. The chances are that one at least will score a home run.

Many and Devious Methods.

People have been known in "running the box" to hold the ticket out prominently, then palm it as the prestidigitator palms a coin—a sort of "now-you-see-it-now-you-don't" proceeding. The best story is that of a shrewd Hebrew who attached the ticket to a rubber-band and so attempted to work the game on the ticket-chopper. Rushing the box was quite a "college prank" at one West Side up-town station, but the railroad couldn't appreciate the joke and neither could the magistrates, so it is no more. But it took a squad of police to stop it.

Now and then a man will be found who practically makes the Subway a five-cent lodging-house—you can ride between the "island stations" at Nevins Street, Brooklyn, and West One Hundred and Eighty-First Street or Mott Avenue (on the East Side) forever for one fare, if you can stand it. The same is true on the "L" and on many surface lines.

Sometimes a man will buy twenty tickets, paying a dollar for them. Then at his leisure he will tear them off, each a little short, making twenty-one—thus declaring a five per cent dividend to himself. Sometimes ten per cent dividends have been attempted on fifty cents' worth—that is, eleven tickets made out of ten—but that is easier to detect.

People will also drop out-of-town trolley tickets of the same color in the box, and once an office-boy was detected with a thin yellow slip of cardboard which, by the aid of a blue pencil, he had made into the semblance of a green Subway ticket.

"RUNNING THE GATE" IS THE GAME OF SNEAKING THROUGH THE OPEN EXIT OF THE SUBWAY OR ELEVATED WHEN A CROWD IS LEAVING THE STATION

Tops of little green chocolate-boxes and other things are deposited hopefully. They will show you quite a batch of them at the office of the manager.

Others have tried to counterfeit the tickets, but it is a costly scheme, and dangerous as well, for the company's secret service is swift and sure in swooping down on the "plant." Sometimes the passes of the employees have been counterfeited, and some good ones have been detected. Such cases the company's detectives take up rigorously and rarely fail to arrest and convict the offender. The danger is too great to trifle with.

One of the managers was asked recently how much he estimated the total loss through all these schemes to be. He threw up his hands.

"Why don't you ask me an easy one?" he answered with a smile. "Aren't you really more interested in knowing the exact amount of coal the power-house consumes or how much it costs to paint the cars, and whether the amount of paint used would color a strip ten feet wide from here to the moon? No? Well, nobody knows how much we lose by the things the people do to do us.

"It's been estimated, I believe, as high as six per cent of the gross receipts. But that includes both fares not collected and those collected but not turned in. Even then it is probably too high. How can we tell? The only way I can think of for us to find out would be for the city to take a day off and practise this Cleveland movement I have been reading about—'live as Jesus would.' Then we might possibly compare that day with the day before.

"These things react on the public, too, you know. For if the companies don't get the fares that are rightfully coming

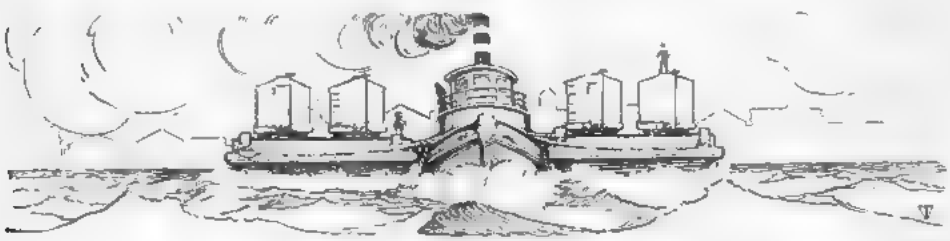
to them, how can they give the public the service that is rightfully coming to it?"

If there are many who ride without paying, there is on record the case of one who paid without riding. That was no less a person than Mark Twain. It didn't happen in New York; it was on a Berlin tram.

Having paid the fare once and received a slip, as they do over there, he insisted on paying again. And each time the conductor went by he kept on paying. Then he listened to what the conductor said and wrote it down. By the expenditure of a few pfennig he got the material for a five-hundred-dollar story.

Once a lady had to get off before her fare was collected. She gave it to the man next her to pay the conductor. The nonplused look on the conductor's face when he received it was terrible.

"Well," he ejaculated when he got his breath, as he rang up the fare, "that's the most honest person in New York!" The man to whom he said it is still wondering which one of the two persons concerned the conductor referred to.



MILEAGE OF NEW ROADS IN 1908.

The Past Year's Contribution to the Steel Paths Along Which Travels the Nation's Commerce.

THE past year's statistics of railroad building show remarkable differences from the previous year's, looked at from any angle. For example, Montana, which was tenth in railroad construction in 1907, last year gained the first place among the States. In 1907 191 miles of track were laid through her territory, while last year 537 were built.

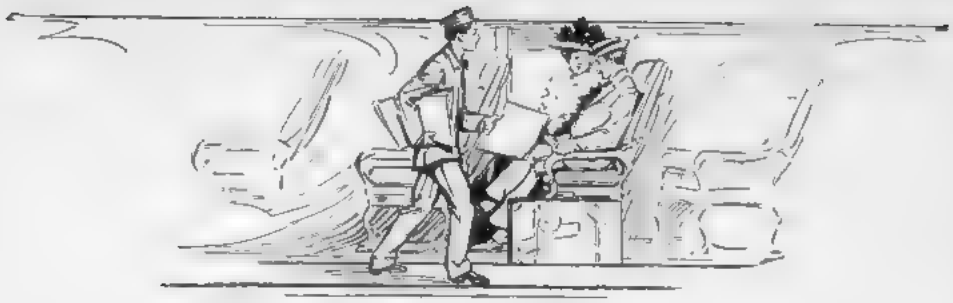
This higher position of Montana was due largely to the Pacific Coast extension of the Chicago, Milwaukee and St. Paul, which was responsible for the laying of 354 miles, against 143 miles the year before.

Louisiana almost succeeded in changing places with Montana in the scale of States. Last year she stood at the head of the list; in 1908 she is ninth, having only 119 miles of new main track to report. Of the total of 3,214 miles for the whole country, against 5,212 miles for the previous year, the States east of the Mississippi can claim only 761 miles. In 1907 the same territory was responsible for 1,884 miles, a decrease of 59.6 per cent.

The territory west of the Mississippi shows 2,455 miles, against 3,420 in 1907, a decrease of only 28.2 per cent. Of the railroad companies the Chicago, Milwaukee and St. Paul is easily first, its Pacific Coast extension being responsible for 790 miles of new track. The Southern Pacific comes next as far as construction is concerned, with 448 miles of track; but of this total 364 miles were laid in Mexico. The Great Northern takes third place with 274 miles, part of which was laid in Canada.

The total number of miles of new track has not been so low for eleven years when, in 1897, the total number of miles laid only reached 2,109. The following year, 1898, was strikingly similar to 1908, there having been a total of 3,265 miles of new railroad put down.

As contrasted with our own progress in railroad building during the past year, Canada laid 21.7 per cent more miles of rails last year than during 1907. Her total mileage was 1,248, against 976 miles in 1907. Of this mileage the Grand Trunk Pacific comes first with 621 miles, and the Canadian Pacific next with 289 miles.



MOTORMAN MUSTARD'S CASE.

BY FRANK CONDON.

What He Thought He Saw in the Subway and Why He Sees It No Longer.

FACTS are despicable, hateful things. They are the potatoes and beefsteak of every-day life. Sometimes the beefsteak is raw and tough, and sometimes the potatoes are underbrowned; but we must take them, eat them, and try to digest them before touching the daintier charlotte russes, the chocolate éclairs, and the biscuit tortonis.

Therefore, let us get down at once to the facts about John Jefferson Mustard, than whom there is not a finer, sturdier chap swiveling a motor-crank in the Subway service of the great and sinful city of New York.

According to the family Bible, John is twenty-seven years away from the day he sprang into being, he weighs one hundred and sixty-one pounds according to the insurance examiner, he goes to church every Sunday he can get away from duty in the tube. he has never tasted alcoholic beverages in any form, he doesn't lie any more than is healthful and desirable in so young a man, he lives with his mother and two sisters in a flat costing twenty-five dollars a month 'way up in Harlem, he rarely gads about o' nights with the boys, and he has received a safe and sane education in the common schools of the metropolis.

There you are. Now we're through with the beefsteak and potatoes and ready for the dessert; and while the captious may cavil at facts, such as have been related are absolutely essential to the story in hand, because, without knowing them, one would smile a wise old smile and wag one's head and say: "Oh, that's all very well. We know that kind of chap. We don't believe a word. Somebody is gulling somebody."

For somewhat longer than a year Johnny Mustard has sat on the little stool on the nose of the fastest express-train, swinging from somewhere out Albany way down to the Battery like a dark red streak of lightning, day after day, month in, month out, without ever having killed a track-walker, jumped a tripper, or worried the superintendent's office by disregarding the schedule. In fact, the men in the upper Broadway yards call Johnny's train the Mustard Plaster, because it sticks so close to the time-table, and that's no merry jest, though a trifle classy in lower Subway circles, where bon-mots, epigrams, and pert sayings are rather rare.

Never a bad report winged its way to the boss, and many an older motorman envied Johnny Mustard's clean sheet That is, until recently, because of late there has been a disposition among the

IF JOHNNY DETECTS SUCH A SMILE, THERE IS APT TO BE A SWIFT ADMINISTRATION OF JUSTICE

men, from sweepers up, to look at Johnny out of the side of the near eye and smile a quizzical, cynical smile, and if Johnny detects such a smile, there is apt to be a swift administration of justice from the end of his chubby fist.

It happened this way. One night, after a day fraught with troubles, such as blockades, break-downs, blown-out fuses, run-over and mussed up track-tenders, Johnny sat at supper with the family, discussing a pork chop and the turmoil of the tube.

"And another thing, mother," he added, after sadly recounting the four blockades in five trips and the story of the decapitated liquor merchant who had tactlessly jumped off the Seventy-Second Street Station and littered up the track for half a block, "there's been something funny that I wanted to tell you about for a day or so past.

"I don't know whether it's my fancy or whether I actually see this lady—"

"Ha, ha!" interrupted Johnny's sister. "Ha, ha!" she repeated with a level, direct, and accusing gaze at her brother.

"I don't know whether it's my imagination or not," Johnny continued, ignoring the rude break, "but half a dozen times, lately, I've noticed a handsome girl — a mighty handsome girl, and I don't know exactly what to make of it. She's generally standing on the far edge of some local station, just standing, looking straight at me.

"Of course, she can't see much. I'm in the box, and it's pitch dark in there, but I run straight into those two eyes of hers time after time. It's only for a second, because I go by the local stations pretty fast; but it's just as sharp and distinct as though you were to stare at me across this table."

"What looks the lady like?" inquired Sister Nell.

"Well," said Johnny seriously, "she's middling tall, with brown hair and nice eyes; but, of course, this is only a faint impression. I don't know what she really looks like, except that she always wears a hat with a bright red plume sticking up on top, and around her neck is a skin of some kind—mink, I think with two heads — mink heads — hanging down, and in the center of each of these heads is an enormous diamond, or a

stone that shines like a diamond. I never fail to see the two stones, glistening in the electric lights."

"Maybe she's your fate," suggested the mother, smiling gently

"Or perhaps the lady's flirting with you, taking you for another man. They say you motormen have sweethearts in every port, just like the sailors."

"It's no joking matter," Johnny went on, disregarding the tone of the family; "there's something uncanny about it."

They all laughed, and before the badinage concluded Johnny was laughing with the others; and when "lights out" tapped in the Mustard homestead that night, the incident had been forgotten, and Johnny was figuring on a new rug for the parlor, besides the brown suit for Sister Nell and the droplight and new gloves.

Whether the mysterious lady was a figment of his fancy or not, Johnny Mustard saw no more of her for a week. He found himself watching the local stations now and then, when, by all the rules of the road, his eyes should have been out ahead, watching the flickering red and green safety lights. With a train-load of hard-worked New Yorkers behind and another express fifty-one seconds ahead, a man with his hand on the controller has little business looking for mysterious females wearing mink furs.

So Johnny reproved himself sharply, and attended to business. He had a reputation and a family to sustain. The reputation might go by the board without serious loss, but the family was another matter, and had to be kept up.

Take the reputation. There was the stretch of express track from Brooklyn Bridge to Ninety-Sixth Street, both of which are express stations. The regular running time between these points is sixteen minutes and fourteen seconds, and O'Malley had covered it twice in less than fifteen minutes.

O'Malley had made every regular stop—the Bridge, Grand Central, Seventy-Second Street, and Ninety-Sixth. And when O'Malley finally dragged the record time down to fourteen minutes and forty-seven seconds, every experienced Subway employee in New York gave it as a conclusive opinion that the time would never be beaten.

Then came Johnny Mustard and the Mustard Plaster. Johnny's train consisted of eight cars, and they were generally crowded to the brim, except during the middle hours of the afternoon Johnny looked at O'Malley's record, and decided that some day an express-train was going to beat that fourteen forty seven, and, when it happened, the hand on the brass would be that of a young chap named Mustard.

And so it turned out. Some six months after Johnny had begun running the Broadway express regularly, he picked out a good afternoon, when the traffic was unusually light and his eight cars contained less than half a hundred people out of Brooklyn Bridge. It was a run to make the veteran guards gasp and to frighten the passengers into a healthy state of excitement.

They said afterward in Subway circles that before he started from the Battery, Johnny got down and charmed the third rail. At any rate, when the express struck the Worth Street curve, everybody on board knew that something unusual was about to happen. There was a lurch west and then a lurch east, and the heavy train settled down into the flanges for a good, hard pounding.

Johnny had the yellow lever as far around as he could get it, and sat, watch in hand, gazing down the track and making memory bets with himself against the famous O'Malley time. In the cars behind him, the local stations went by in pale yellow flashes. The Mustard express tore into Fourteenth Street Station in four minutes flat. The stop was brief and abrupt

The guards seemed to have caught the spirit, and the tinkle-tinkle of their double-ring clattered from one end of the train to the other in a jiffy. Then they swung out into the long, straight stretch to Grand Central; time from Fourteenth to Grand Central, two minutes thirty seconds. From Grand Central to Seventy-Second Street, Johnny defied all the laws of gravitation.

He swung around curves at forty miles an hour, and if anything had let go the morning papers would have had a perfectly fine time with the gory details. But nothing happened, except the shattering of all records and the establishing

of a new one that has never been touched. Time to Seventy-Second Street, three minutes thirty seconds.

Then came the grand, final dash to Ninety-Sixth Street, and the huge express simply heaved along over the straight rails like an underground aeroplane. Time to Ninety-Sixth Street, three minutes thirty-nine seconds.

Johnny looked up from his watch and grinned. The conductor chased into his booth with an inquiring look.

"What time?" he asked.

"Thirteen minutes thirty-nine seconds from the Bridge," answered Johnny, and the double-bell clanged. "Now, let them talk O'Malley to me."

Mr. Mustard was conning over these solemn thoughts a week after his domestic confession, when a couple of arrogant red lights ahead caused him to slow down. His train came to a dead stop in front of the local station at Spring Street, and during the pause he glanced idly over to the little crowd standing on the edge of the concrete, craning necks, after the fashion of all true New Yorkers who travel in the tube.

He could see between two of the steel supports, and as his eyes reached the end of the platform, he straightened up with a shiver. *She* was there.

She stood apart from the others. Her gown was gray — all gray, except for the fringe of mink about her throat. From the hanging ends blazed the two bright stones, and above her round hat waved the brilliant red plume. She was staring straight through the two supports. Her eyes seemed to burn into Johnny's, and he gazed back, stupefied, inert.

Then the red ball in the signal rolled around, and the green showed. With a sigh of relief he threw on the power, and the express gathered speed.

In the next two weeks Johnny began to lose his appetite, and the family worried over the dark spots under his eyes. But he was mute to their inquiries, knowing the futility of telling a home-spun and work-a-day family that an ever-appearing vision in gray, standing on local platforms, was slowly booking him for a long visit to the home for nervous prostrationites. Yet such was the case.

THE FIRST TIME JOHNNY MUSTARD IMAGINED THAT HE SAW THE PRIM LITTLE FIGURE IN GRAY, HE WAS FLYING ALONG AT FORTY MILES AN HOUR.

Day after day, the pretty woman in gray interrupted Johnny's train of thought, as well as his train of cars, and the schedule-sheets of the company, for the Mustard Plaster began to gather a bad reputation. It stopped when there was no apparent cause for stops. It came in late, where, previously, nothing

of the kind had ever happened to it, and the outcome of it all was a sharp reprimand for Johnny Mustard.

He said he would do better. He did not.

When the driver of a fifty-ton express in the New York Subway begins to see a lady in gray standing on local platforms, with a red plume above her fair head and two diamonds blazing from her breast, it isn't necessarily a bad sign; but when the constant repetition has begun to frazzle his nerves, and he imagines that he sees her standing on the local tracks beside him—on the track, mind you, where no woman ever goes—it is time for hard thinking and a competent physician.

The first time Johnny Mustard imagined that he saw the prim little figure in gray on the local track, he was flying along at forty miles. It wasn't exactly a figure; it was only a shoulder, a gray, rounded shoulder, mantled with a furry edge of mink. A splotch of green light against a signal-box threw the outline into relief, and with a frightened intake of breath he jammed the emergency-brake over, and one hundred nervous New Yorkers fell down in a heap on the floors of eight cars, cursing with precision and bluntness.

Time and again the same thing happened. Coming through the light-flooded station at Eighty-Sixth Street, he would see the red flash of the plume, perhaps moving from the main track to the local. It would miss the front of his car by inches, and his shaking hand would invariably throw on the air-driven clutch, and New York's profanity record for the day would receive a slight boost from the coaches behind.

Johnny found himself looking for the girl. He never expected to see her in the flesh, because the police do not allow beautiful young women to parade on subway express tracks. But he watched for the intangible, indistinct, half-ghostly flashes—the flirt of the brown mink neck piece, the disappearing edge of the gray skirt, the brilliant flash of the diamonds—and by keeping up a continued and nervous outlook, he found the mysterious one in gray so often that trouble began to brew for the express-train he drove.

Sharp-eyed men in the tall building down-town were beginning to look over the record-sheets, and cast disapproving glances at the work of one John Mustard. If he couldn't do better as a motorman, he might accomplish something as a guard, they figured, and promotion backward was hovering in the near neighborhood of Mr. Mustard when the climax came.

The night outside the tube was biting cold. Shivering passengers flowed into the entrances, bowling over the weak, fighting for tickets, beating their way into trains already crowded to the outer doors. The underground warmth smote them gently, thawing them into amiability. Somewhere down at the lower end of the island, Johnny Mustard was bowling north at the head of his express, tearing into the darkness at forty-five miles an hour, because he was one minute and ten seconds late. He pulled into Grand Central one minute behind time, and fumed as the tightly jammed mob on the platform herded itself against the openings of the train.

He would get part of that lost minute back before the next stop, he would, or throw the train off every curve between. Behind him the sad-eyed workers pawed and fumbled with their evening papers, hanging to straps, swaying in maudlin fashion, jolting each other's shoulders.

The express swung round the Times Square curve like an unleashed comet. It leaped ahead as the tracks straightened out into upper Broadway, and with his hand on the controller, Mustard peered through the little window into the blackness, blessing the pin-points of green as they showed in recurring order against the inky darkness.

At Fifty-Ninth Street his train was

flying at fifty miles an hour, and the cars were swaying dizzily. The green lamp flashed under his arm like a swishing dot. The next instant he leaped to his feet, threw on the air, and stood with clenched hands.

Down the track was a filmy, rippling haze. In the center of it gleamed two bright pin-points of light, small, like diamonds, and above them waved a red plume. Tearing into the murk was a hundred thousand pounds of steel and oak, and in his little box Johnny Mustard leaned against the door, cowering, shivering.

The heavy train squealed and jerked, and stopped with a throbbing roll that started at the wheels and tore upward to the roof, shaking the five senses out of every one on board. A guard dashed up the aisle, scattering terror-stricken passengers, and grasped the shaking motorman by the arm.

Johnny braced himself. "Gee," he said, "I thought I ran over a woman!"

Conductor and guards clattered out of the train. They went back over the track. They hunted between the pillars, but they found no trace of a woman.

A GUARD DASHED UP THE AISLE, SCATTERING TERROR-STRICKEN PASSENGERS AND GRASPED THE SHAKING MOTORMAN BY THE ARM

After ten minutes' useless search, a new motorman sat in Johnny Mustard's box, and the express went shooting northward.

A week later Johnny Mustard came back to work. This is what saved his job. It is a signed statement by Father McCabe. It reads:

I have known John Mustard intimately for twenty years—ever since he was

a boy. He has never tasted a drop of alcoholic liquor.

Now, then, what was it Johnny Mustard saw? Did he see anything at all? Was there just one little weak spot, one trifling abnormality in the gray matter on the right side of the Mustard brain from which this vision sprang?

Scientists might answer this question, but a mere narrator of facts can only dodge it. Nowadays the Mustard express is never behind time, and the superintendent beams. In his dim little booth at the head of the first coach, Johnny has clenched his fingers into the palms of his hands for six long months as his train has spun along through the Subway murk, because the gray flash of a skirt, the waving flip of a red plume, the brown flitting of something that looks like mink, has sorely troubled his common sense.

But no more. The Lady in Gray has ceased to come. A green lamp is a green lamp, not something feminine. A splash of white on a pillar is not a bit of flying gray skirt. There is no mink in the Subway for Johnny Mustard, for up in a small but complete Harlem flat there stands a girlish figure each night beside the soup and chops.

Her name was once Helen Mulqueen, and she played marbles with Johnny Mustard in the lot beside the big school, but that was years before the boy grew up and began to see odd things in the Subway. Helen's first name is still Helen, and her last name begins with M, but the rest of it is Mustard. Which may suggest to inquiring minds a possible remedy for certain slight abnormalities in the mental vision peculiar to the unmarried.

THE PENNSYLVANIA AND PROMOTION.

Old Barrier Between Technical and Manual Labor Has Been Broken Down by John S. Considine.

A CHANGE in the policy of the Pennsylvania's operating department will give longed-for opportunity to scores of ambitious men who, under the old rules, would have found themselves at their limit of promotion when they became track foremen. The first instance of departure is the case of John S. Considine, of Columbia, Pennsylvania, who has been promoted from the position of track foreman to that of assistant supervisor.

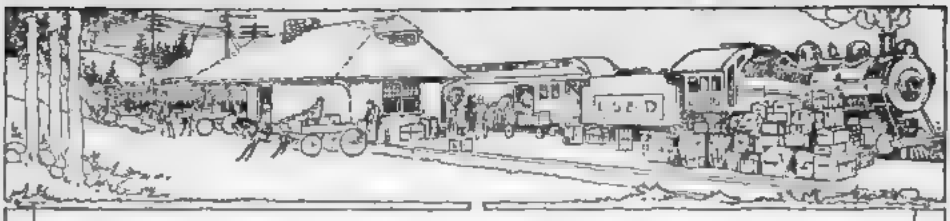
It has been the custom heretofore to employ graduates of technical institutions with a view to training them for important positions in the maintenance of way and mechanical departments. A rodman, for instance, would be a civil engineer, and would be considered in line for assistant supervisor, supervisor, assistant engineer, superintendent, general superintendent, or vice-president.

Mechanical engineers were similarly drawn for the motive power department. Men outside of these two lines of promotion reached their limit in the operating department as track foremen.

Recently the management has been carefully watching the work of all grades of men with a view to the promotion of men who have applied themselves diligently to their duties and educated themselves beyond the scope of those duties. Mr. Considine is the first to feel the benefit of the new policy. He began work with the company when he was fifteen years of age as a track laborer.

After five years of this kind of toil, he was assigned to duty in a supervisor's office, and there he mastered the elementary principles of civil engineering. Later he was sent out on the road as track foreman, and his work was so distinctly good that the position of general foreman of tracklaying was created for him.

At this point he would have been compelled to stop in the ordinary routine, and his excellent work is, in a large measure, responsible for the breaking down of the wall that has stood as an insuperable barrier between the "commissioned officers" and the rank and file of the Pennsylvania's army.



SONG OF THE RAIL.

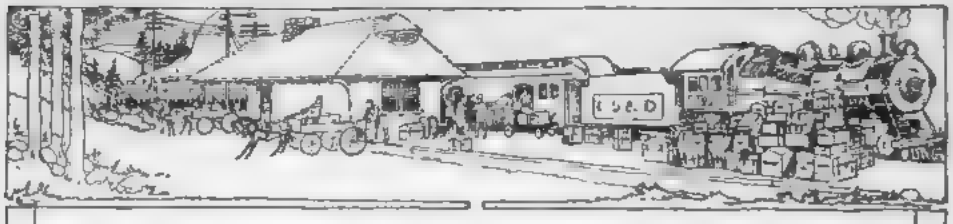
BY FRANK HILL PHILLIPS.

Written for "The Railroad Man's Magazine."

OUT of the town with a rush and a roar,
Leading by, speeding by, many a door;
Over a glitter of blue burnished steel,
Singing the song of the flange of the wheel.
Clickety click! Hurry up, quick!
Rickety, clickety, clickety click!

Deep in the mountainside's cavernous maws,
Hurry on, skurry on, never a pause.
Barely a blink for their Stygian hue,
Out of the dark again, into the blue.
Clickety clack! Over the track!
Rickety, clickety, clickety clack!

Over the trestle and under the bridge,
Dashing on, flashing on, over the ridge.



Down in the stubble the farmer-boy stays,
Halting his team for a moment to gaze.
Clickety clock! Fodder to shock!
Rickety, clickety, clickety clock!

Whizzing by hamlets, a dozen or more,
Rearing by, tearing by, farms by the score.
Fisherman perched on the bank of the brook
Languidly turns for a moment to look.
Clickety cluck! Fisherman's luck!
Rickety, clickety, clickety cluck!

Past a red school near the horseshoer's shop,
Shooting by, tooting by, never a stop.
Hat-waving cheers from a brown-legged boy,
Bonnets of gingham and eyes that are coy.
Clickety click! Old 'rithmetic!
Rickety, clickety, clickety click!

Music's immortal; the words which belong,
Each singer sets to his own little song.
Whether a dirge or a dance it recalls
Rests with the ear where the melody falls.
Clickety click! Only a trick!
Rickety, clickety, clickety click!

Observations of a Country Station-Agent.

BY J. E. SMITH.

No. 12. Chauncy, the Ticket-Agent, Delivers a Few Remarks Relative to the Ways of Women, Love-Lorn Youth, Honeymoons, Counterfeits, and the Joys of Travel.

"DID you notice that?" asked Chauncy, the ticket-man, turning away from the ticket-window. "Notice what?" "That fellow who has just gone out was trying to pass a bogus coin on me."

"Thought you were an easy mark, eh?"

"You can tell every time without seeing the coin when a man has a bad piece of money," said Chauncy. "He does not throw it down on the counter with confidence. He lays it down gently, keeps it covered with his hand, and shoves it over with a hesitating sort of motion, like leading a boy to the dentist. They all do it that way when they know it's bad."

"How are you able to tell a counterfeit?" I asked.

"Mostly by the feel, just like shaking hands with a politician. All counterfeits are alike. They give off on contact a sort of smooth and slippery sensation not possessed by the genuine. I get a good many of them."

"That's easily accounted for," I ventured. "When a man approaches this window and bestows a single glance on that innocent, trusting countenance of yours, he just naturally reaches for the bogus half-dollar he has been carrying for a year or two awaiting an opening."

"Thank you for shedding light," said Chauncy, "but you notice that not much of it gets into the till, which shows I'm keener than I look. The manner of the man presenting his money is something of an index to his character."

"Is it?" I asked with innocent surprise. "When I see the color of green I forget all about human nature.

"Not so with me," said Chauncy. "If the money was mine, I might. But it belongs to the company, so I remain cool and passive, and am thus able to reflect on the source thereof. A young man will bluster up to the window, garbed in rah-rah clothes and wearing Mud River diamonds, and call out loud and strong

"'How much to Upland?'

"'Fourteen cents!'

"'Gimme a ticket!'

"Then he fumbles loosely in a vest-pocket and brings out a bunch of money and untangles a twenty-dollar bill, with a sort of I-do-it-every-hour-of-the-day indifference. It's all for effect. He thinks he has led me to believe that he is the boy to break Armour's oat corner. My real thoughts are that he is a cheap piker, with an ace up on a hand of small misfits."

How Uncle Ezra Does It.

"Don't seem to me," said I, "there's any need of real thoughts in this business, outside of making change."

"Then there is the other extreme,"

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Chauncy continued, without even glancing in my direction. "When Uncle Ezra, of Buckey-Bottoms, comes to the ticket-window for his annual trip to Pike County and buys his round-trip ticket for eighty four cents, he carries no vagrant change in his pocket. Ezra unbuttons his vest and feels cautiously down inside of his shirt.

"By and by he finds the combination and brings forth a leather pocketbook. It is worn and old—the one his folks gave him for Christmas back in 1862. Then he turns his back to me and unstraps it. I am denied even a peep at the contents."

"Wise old man," said I.

"He does that because he is acquisitive and suspicious. He gives me the impression that he has been fleeced at some time; that he has been lightning-rodded, gold-bricked, or patent-righted in his more hopeful days; and now it is his resolute purpose that humankind shall never again lay covetous eyes on his store. At last he finds a one-dollar bill and holds it between his teeth until he rebuttons the safety deposit-vault; then he turns about, and we complete the transaction face to face. Thereupon a conversation something like this takes place:

"'You should not take a one-dollar bill in your mouth, uncle,' says I. 'It's the filthiest rag a man can find. It's teeming with microbes—ten million to the square inch. Lots of them are the hydra-headed, jungle-bred, man-eating kind.'

"'Hey?' says Uncle Ezra, scooping one ear forward with the hollow of his hand. I see that he is deaf.

"'Nice day!' I yell, taking the short cut to the finish. Then uncle feels that I am real friendly, and tells me all about the crops, and would tell me how this country looked when he came out here in 1858 if other passengers didn't edge him out.

"What a fool I am, anyway! Why should I caution Uncle Ezra against microbes? Dear old Uncle Ezra, who has lived seventy-odd years on surface water and washes his hands only as often as the sun crosses the equinox!"

"It doesn't seem to me, Chauncy," said I, "that it is any part of your duties to caution passengers about anything outside of keeping off the track and shutting the waiting-room door."

"AT LAST HE FINDS A ONE-DOLLAR BILL AND HOLDS IT BETWEEN HIS TEETH UNTIL HE REBUTTONS THE SAFETY DEPOSIT-VAULT."

A Woman and Her Purse.

"Quite true," replied Chaunc. "But even a ticket-agent has humane impulses at times. But, speaking of money, when a woman buys a ticket it never occurs to her, until after you have stamped the ticket and stand waiting, that the transaction has a monetary consideration, and that it is up to her to pass a rupee over the counter to the agent.

"She notices the agent hesitating with his finger on the ticket. She catches his inquiring glance. She interprets it as homage to her sex or as impudence, according to her mood, and is debating it when the agent says:

"'Seventy-two cents, please!'

"Then she utters an exclamation of surprise, makes a frantic grab at the hand-bag, and finally finds a coin down in the northeast corner."

At this point there was an uproar of hilarity in the ladies' waiting-room. I glanced through the window with some curiosity. A large lady—a very large lady—had backed up against the wall, and was being beset and bantered by her companions.

"Do they mean violence?" I asked Chauncy, with some apprehension.

"Not at all," replied Chauncy. "Be calm. This excitement takes place whenever a woman weighing over two hundred pounds comes into the depot. You see, all they want her to do is to step onto the automatic weighing-machine. They want to weigh her, and, for reasons of modesty, she resists. After a woman reaches a hundred and eighty she shies at the scales like a country nag at an automobile.

Cruelty of the Sex.

"A trim woman of one hundred and thirty-five to one hundred and forty-two pounds will step upon the platform gladly, but the crowd is not particular about her. They want abnormal ones. The crowd demands extremes. It will invest its pennies in two hundred pounds up, or from ninety-five pounds down.

"A man will supply the pennies every time for a bunch of femininity of one hundred and forty pounds, but a woman will not. If she cannot show up her sister to a disadvantage, she will save her penny for the missionary society."

"You do not seem to have an exalted idea of womankind," I intimated

"I have," replied Chauncy. "Not of those that travel, but of the type I see in my dreams. I worship the memory of *Maud Muller*. I picture a country maiden—a touch of tan—the blush of the wild rose—a shaded lane—"

"Oh, I see!" said I with enthusiasm. "At the far off end of the lane the clover-pasture and the muley cow—and ten million flies! At the receiving end, the old farmhouse and a five-gallon can of bloom-producing, health-giving buttermilk; perchance a drowned mouse!"

The Joys of Travel.

"The women that come to the depot," continued Chauncy, restraining his enthusiasm over the pastoral picture, "always seem uncomfortable, often overdressed, and generally appear to be on a strain. I see 'em laced and painted and artificial. They congregate in the waiting-room and sit stiff and upright. They eye one another critically on points of millinery and tailoring, and they entertain themselves with judgments of how cheap and tawdry, unmatched and inharmonious, is the general aggregation of flubdubbery with which womankind bedecks herself."

"It must be a great relief to them," said I, "to be able to cast their eyes occasionally to the ticket-window from which a masculine face looks out. To be sure, it is not much of a face—a little too blue in tint and shy on angles—but the sad, anemic ensemble of features you present is no doubt restful to eyes that have gazed long on flashy ribbons and gay-colored plumage."

"To go somewhere, to be on the move, is a mania with some people," said Chauncy, ignoring my end of the conversation. "Yesterday afternoon—hotter than blazes, ninety-five in the shade—a woman came to the depot with five little children. The youngest she carried in her arms. She waited an hour for a train.

"The children got dirty and cross, and she scolded and fretted with them continually. The baby cried, and when the woman came up to buy her ticket she was disheveled and miserable. It aroused my curiosity. Why would a woman travel with such a brood on such a scorching day? Sickness or death, probably; so, I asked her, with some concern, if Uncle Zachariah had passed away.

"Oh, no—there wasn't any funeral. Just going down to Mill Grove to visit a sister. The children liked to go so well. They always enjoyed the trip so

much. Then a little cherub of three fell off a bench.

"The mother promptly boxed the ears of an older one who was *particeps criminis* in the tumble, and the infant she was carrying added a discordant howl to the chorus. Two older ones ran out on the track, and the mother darted after them. Then I wiped my sweltering face and marveled at the joys of travel."

"In the coming and going of people there is something for every mood." He stopped a moment. "Yesterday," he went on slowly, "a coffin was unloaded from number twenty. That is not an unusual thing. A man got off the train and gathered about him four motherless children. They had come a long way to bury the mother among her people near the spot where he had first met her.

"It was a sad home-coming. I thought of those little tots—of all that lay before them—of separation and the struggles and pitfalls that come when the love that guides is no more—and I felt a measure of the emotion that showed through the tears on the man's weather beaten face. But that was yesterday. With each day's sun the scene shifts.

A LARGE LADY—A VERY LARGE LADY—HAD BACKED UP AGAINST THE WALL, AND WAS BEING BESET AND BANTERED BY HER COMPANIONS.

One Touch of Sorrow.

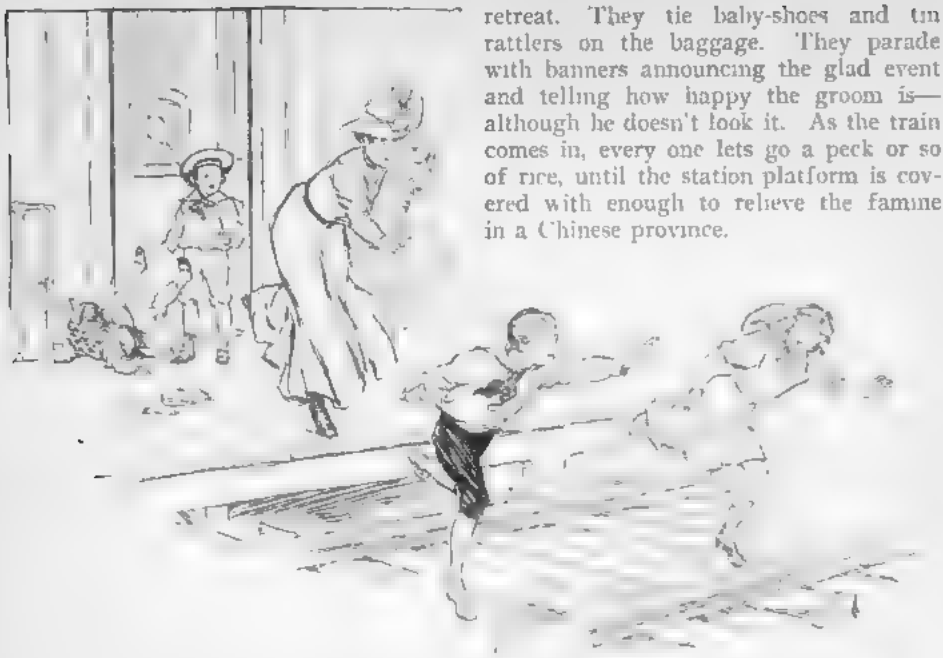
"You talk like a man in need of the sarsaparilla treatment," said I. "Isn't there anything that gives you an occasional pleasure? Are there no happy instances?"

"Occasionally we have a thrill of gladness," Chauncy replied, sitting deep in his chair and putting both feet on the table. "Occasionally we are touched with some emotion of sentiment. Often there is a pathetic instance and in between there is something ludicrous."

Chauncy lit his pipe and pulled heavily

Love's Young Dream.

"To-day we had the infatuated youth and the love-lorn maiden. She was going far, far away, to be gone two or three whole days. He came to the station with her, and they sat close together. He seemed to realize that he would not see



"TWO OLDER ONES RAN OUT ON THE TRACK, AND THE MOTHER DARTED AFTER THEM. THEN I WIPED MY SWELTERING FACE AND MARVELED AT THE JOYS OF TRAVEL

her again before Saturday; so he gazed long and lovingly into her deep brown eyes.

"She slipped her hand into his, and he pressed it softly and held her close. Two hearts with a single rhythm. Other passengers came in and rubbered. Some snickered outright. Others only smiled indulgently. But the pair wotted not. At last, as her stay with him grew shorter, she laid her head gently on his shoulder, and he slipped his arm around her waist with a manly pressure.

"I squinted at 'em through the ticket-window. Some way it sort o' fuzzled me. A woman came up and bought a ticket and gave me a half dollar. I gave her the ticket and change for a dollar! I was shy a half. That's how much things affect me.

"To-morrow we may have a wedding-party," Chauncy continued. "That is always a happy event in the daily routine of a ticket-agent's life. They marry at noon and leave on the three-o'clock train for their honeymoon trip. All the young people come to the depot to see them off.

"Then we have a half hour's session that reminds you of recess at a 'dippy' retreat. They tie baby-shoes and tin rattlers on the baggage. They parade with banners announcing the glad event and telling how happy the groom is—although he doesn't look it. As the train comes in, every one lets go a peck or so of rice, until the station platform is covered with enough to relieve the famine in a Chinese province.

"The groom picks it out of his eyes, and the bride digs it out of her ears. In the meantime, the most hilarious idiot in the bunch has preceded them into the car and distributed handbills telling all about the couple, and the passengers arise and grin at them with exasperating curiosity. Telegrams are sent ahead, and wherever they go they are peered at and pointed out."

Chauncy took his feet off the table and leaned toward me. "No joyous outpouring of people and happy wedding-bells for me," said he. "No honeymoon trips. When I pull off that gladsome event, it's the dead o' night, in a dark alley, then away in an air-ship."

The Old, Old Story.

There was a tentative knock at the ticket-window. Chauncy answered it, and for some moments carried on an earnest conversation with the visitor. Shortly he turned to me.

"The gentleman would like to have a talk with you," said he.

I went out into the waiting-room, and was greeted warmly, almost effusively, by a young man of apparent respecta-

bility. He grasped me by the hand and hung on. The situation had the pathos of brother finding brother after a long and weary journey over a rocky road. Then his face saddened and his voice sank and trembled a bit.

"Brother," said he, "I have met with a great misfortune. I need a friend."

My first impulse was to back off, but his face held me. It did not wear the weakness of common dissipation. It had no hard criminal lines nor the sinister boldness of a professional piker. He sat down and gulped and silently struggled with a great emotion.

"I want to go home!" he sobbed.

"Where do you live?" I asked.

His Mother's Ring.

He told me; then he told me a long story of Western adventure. He told it sincerely, and he adorned the tale with a few tears. When he came to his mother's death, back at the old homestead, and her pathetic call for her wandering boy, he could not speak for some moments.

"Did she die hard?" I asked sympathetically.

Of course that was a fool question, but it is the way I have of blundering into an awkward silence

"I want to go back," he continued. "Somehow I feel that if I could stand by her grave and place a flower upon it—she might know. It will take five dollars—five dollars to get me there and brush me up a bit."

He said this in a soul penetrating, melancholy sort of way, like a tolling bell.

"The fare is only a dollar-fifty," said I cheerfully. "You should be able to get there on two dollars."

"Maybe I could—maybe I could," he moaned; "but why should I expect you to help me with even the beggarly sum of two dollars? You do not know me! How do you know that you would get it back? Great Heavens, have I come to [illegible]"

He buried his head in his hands, and his frame was shaken with a mighty spasm of despair. Suddenly he sprang to his feet and clutched at his finger.

"Take it," he cried. "Take this signet-ring! She gave it to me when I went away. Hold it till I return you the two dollars."

It was dramatic, and I was touched. I went down in my pocket and brought out two silveroid bucks I had been saving for a beefsteak and handed them over.

"TO-DAY WE HAD THE INFATUATED YOUTH AND THE LOVELORN MAIDEN SHE WAS GOING FAR, FAR AWAY, TO BE GONE TWO OR THREE WHOLE DAYS."

He laid his hand affectionately on my shoulder. "I cannot tell you how grateful I am," he said in a tremulo voice, "but I must ask another favor. Won't you put the ring away in your office-safe? I would not part with it for anything in the world, and you—you might lose it. I will send for it as soon as I get home. Will you promise me?"

I assured him I would guard it as a

"TAKE IT," HE CRIED. "TAKE THIS SIGNET-RING! SHE GAVE IT TO ME WHEN I WENT AWAY. HOLD IT TILL I RETURN YOU THE TWO DOLLARS.'

sacred trust. He went away, and I returned to the office and told Chauncy the pathetic tale. Chauncy took the ring and looked it over critically. He seemed deeply touched

"There are different varieties of gold," said he at last, with a fine Tiffany accent. "There is the deep yellow California gold and the lighter colored Australian gold, but this seems to have a peculiar cast of its own. As an expert, I should say that this is the product of the Yazoo Valley."

Chauncy, the Gold Expert.

He rubbed it briskly over a piece of white clip. "Quite right," he went on, noting the black tracings on the paper. "Yazoo Valley gold. You want to keep that locked up. You can't afford to take any chances on losing it. Gold pieces like this are rare—awful rare."

I put it away in a private drawer. Don't talk to me of this c o u n t r y's incomparable mail service! That fellow's letter never did reach me. Of course he had my address—I attended to that. Chauncy asks me why I do not wear the ring.

I did take it out to look at it, but a damp safe is no place to keep j e w e l r y. Chauncy stretched his neck with insolent curiosity. I hastily wrapped it up and put it away. The sacredness of the trust actually makes me touchy.

A few nights ago I had an awful dream. I lunged forward in the bed and struck out with my fist. "Avaunt!" I yelled wildly. "Begone! Skiddoo! Vamoose! Down the pike for you! Scat!"

"John, John!" cried my wife in terror. "What in the world is the matter?"

"I had a horrible dream," said I when aroused. "I thought a fellow came along with a hard-luck story and asked me for two dollars so he could get home and lay a flower on his mother's grave."

"You wouldn't turn on a poor, unfortunate man that way, would you, John?"

I turned over and made no answer. In a few minutes I was dreaming that my name was Harriman and that I was consolidating the canals of Mars.

INDUSTRIAL ROLL OF HONOR.

Records of Courage in Many Quarters and by Many Kinds of People.

Two Men Who Did Not Shirk a Plunge.

ONE bitterly cold day last winter, when the water of the bay was filled with ice and a plunge into it seemed about the least inviting thing in the whole scale of human experiences, two men dived simultaneously off the Battery wall at New York, to rescue a young woman

The young woman, Albertine Decquer, is a manicurist. She had disappeared from home a day or two before, and seemed to have no particular reason for being at the deserted point where the accident occurred

As she fell, a longshoreman shouted "Woman overboard!" and Private F. H. Crane, of the United States Signal Corps, ran along the sea-wall, stripping off his coat as he ran, and dived after her. Hugh Brosman, a laborer, at the same moment ran along from the direction of the park and plunged in.

Together they seized the girl by the arms and held her until they were all three dragged ashore by men from the city's fireboat fleet. Then they were carried into the firehouse, exhausted by the terrible cold, and stimulants were administered

Carnegie Medal for Wells Fargo Messenger.

A CARNEGIE medal has been awarded to George L. Roberts, a Wells-Fargo express-messenger on the Valley division of the Santa Fe, for a deed of heroism performed about a year ago

Two little girls, Dora Doyle, twelve years old, and Agnes Gettins, thirteen years old, were walking across the railroad trestle over the San Joaquin River, at Antioch, California, when train No. 5 came along. Roberts happened to be standing at the door of his car and saw the younger child coolly select a long stringer and await the passing of the train

The Gettins girl, however, panic-stricken, sprang to a stringer that was so short that as the engine passed her it struck her a glancing blow and knocked her into the river. Roberts immediately dived from the door of his car and swam to the unconscious child When he reached the piling of the trestle with her he was exhausted, and two men in a boat picked the pair up.

The child wrote him a letter of thanks which is as highly prized by him as the medal he has just been awarded.

Another Member of Firemen's Courage Club.

SOME spectacular rescues were performed at the terrible disaster which resulted in the loss of ten lives in a tenement fire in New York, on the 3d of March. Prominent among these rescues was the feat of Fireman Clark, of Truck No. 24. He was perched on the top of an extension-ladder, which was swaying wildly, when he suddenly dived, head-first, through a fourth-floor window.

So long a time passed that his comrades felt certain that he had lost his life in his attempt to rescue some one within, but at last he appeared at the window, dragging Mrs. Mulada Momad. Every particle of clothing had been burned from his body.

With the last fragment of his strength he swung the woman across the window-sill into the arms of a waiting comrade, and then collapsed across the ledge. His face and head were terribly burned.

Three firemen passed him, unconscious, down the ladder. By this time the fire was an uncontrollable fury, and Chief Croker, arriving on the second alarm, forbade any of his men to reenter the building.

Recognizing Heroism of Five Years Ago.

THE Slocum disaster in the East River at New York, is recalled by the announcement that arrangements have been made to present a gold medal to one of the heroes of it, on March 18, at the Capitol in Washington

Miss Mary McCann, who is about to be graduated from the Florence Crittenden Training School, Washington, was a little girl at the time of the disaster, five years ago. She was just recovering from an attack of scarlet fever on North Brother Island, near the place where the General Slocum was destroyed. Disregarding her own critical condition she waded into the river and rescued nine children.

At the presentation in the Capitol will be the Speaker, the Vice-President, and Representative Goulden, of New York. The ceremony will take place in the Speaker's room

A Hero of the Inaugural Blizzard.

THE blizzard that struck the Atlantic Coast on the day of the inauguration of President Taft helped to call out the pluck and endurance of a little engineer belonging to Engine Company No. 89, of New York's fire department. This short but sturdy son of New York, Joseph Turdy by name, was standing at the door of the engine-house when a man dashed past calling for the police and shouting that there was a man in the East River at the foot of Ninety-Sixth Street.

Calling a comrade, who dashed after him half dressed, Turdy pushed his way through the terrible wind that was hurtling across the island at the rate of fifty miles an hour. Told in his own words in the New York *World*, the remainder of the story is as follows:

"'I calls Billy McLaney, one of the boys here, who happens to be up and dressed, and we tears out. I call to mind saying to Billy McLaney as we dusts along, that we'll have to hurry if we want to get anybody out of the East River, because it's a regular devil of a night—snowing and blowing to beat the band.

"'Somebody told me the wind was fifty miles an hour, and I believe it. It was like pushing against a wall, and we couldn't see thirty feet ahead of us.

"'As we turns into Ninety-Sixth Street, heading for the river, we meets up with the fellow that gave the alarm. He is trying to tell two policemen that a chap fell off the pier and his partner is hanging on to the fellow while he goes for help.

"'He's only half-dressed. How he came to be out in that weather with half his clothes on is more'n I know.

"'So we all lams down to the wharf in a bunch, and, sure enough, there's a chap over the stringpiece, blubbering and hanging on to a boat-hook. The hook is caught in the man's coat, down the back, so that his hips are pulled up and his head is down under water.

"'We all give a heave on the pole and the hook begins to slip. I says, "Hold on! I know a better way, fellows," and I skins out of my coat and boots, and over I go after him.'

"'Wasn't the water pretty cold, Joe?' put in one of the other firemen.

"'Well, it wasn't what you'd call warm,' said Turdy, conservatively.

"'Anyway, I got a grip of the chap and tread water, hanging onto the pole with one hand and holding his head above the water with the other. He was just a dead weight, with all the life gone out of him.

"'I had to stay there until some of the others could run all the way to a stone-boat, two blocks up, and roust out the crew and get some ropes and things. Then they came back and towed us around the corner of the pier and looped some big ropes down over me—me not helping much because I was getting tolerable stiff and tired by then—and they pulls us out and rips us apart—we were sort of frozen together, you understand—but the poor boy was dead.'

"'How long were you in the water?' asked the reporter.

"'They said half an hour, and at the time it seemed fully that long,' answered the little engineer."

Foreman McKemon Saves Boy from Death.

W. T. McKemon, foreman of a construction gang on the Western Pacific, was working an extra gang of Greeks two miles east of Livermore, California, some months ago, when he saved the life of a fifteen-year-old boy and imperiled his own. The boy had fallen into a creek which was swollen by the icy waters of the melting snow from the mountains. Flinging off his rain-coat and hip-boots, Mr. McKemon plunged into the stream.

He had to swim about twenty-five yards to reach the boy, who was sinking for the last time by the time the foreman reached him. McKemon seized him and swam ashore, laid him on his knee, using his knee as a barrel, and after working hard on him managed to revive him sufficiently to send him home in charge of two of the Greeks.

Mr. McKemon himself suffered more than the boy he saved. He had been sick for some time and the effect of his immersion in the ice-cold water threatened to be serious. He has since, however, fully recovered from the chill he received. McKemon is well known among trackmen on the Coast.

THE YELLOW ROSE.

BY EDWARD BEDINGER MITCHELL,
Author of "An American Knight Errant," etc.

How Suspicion and Curiosity Set a Young Man Wandering in a Devious Maze.

CHAPTER I.

The Arm at the Window.

LISTENING under the rays of the street-lamps, the wet pavements of Irving Place stretched ahead in the raw gloom of a November evening. All through the day it had been raining—a disagreeable, cold rain, which threatened any minute to become snow, and left no doubt that winter was close upon the city.

Now, though the downpour had come to an end, a few drops still fell. Out of respect for his silk hat and evening clothes, Terence Saunderson held an umbrella as he walked slowly northward. He was in no great haste to reach his destination, the house on the corner of Gramercy Park. The average evening reception he detested, and it was to an evening reception that he was bound.

It was not an average one, it is true, for it was taking place in the home of Mary Dunston. To Terence no function was an ordinary one which gave him an opportunity of seeing that young lady, but he was far from happy. Here he was, about to spend the evening in her guardian's house, and, in all probability, he would not be able to say ten words to her alone. In the hope that he might he had started early, but the hope had grown fainter and fainter as he neared his journey's end.

At length it flickered out completely until, as he realized the full gloom of the prospect before him, he turned his head to scowl at the corner house across the street. In front of the entrance, on Twentieth Street, the rolling of carriage wheels and the slamming of doors indicated the arrival of the first of the guests. Through the heavy curtains of the windows in the side wall facing him he could see nothing, but he knew that the rooms behind must be already tenanted.

"Confound it!" growled Saunderson. "This sort of thing is as bad as not seeing her at all. I wish I had stayed at home. Hallo!"

His eye had fallen on the figure of a man lurking close to the wall under one of the windows—a shabby specimen, his hands thrust in his pockets, and his coat collar turned up, in a feeble effort for warmth. Saunderson shivered as he looked at him.

"Pleasant perch on a night like this," he muttered. "I wonder what the dickens he thinks he is doing here. He might at least choose a warmer spot. Now, what the deuce!"

The curtains had parted, the heavy window was raised, and a bare white arm projected into the night. Obviously it was that of a girl in evening dress, but of its owner, shielded by the hangings, Terence could catch but an indistinct glimpse.

As the arm appeared above him the vagrant raised his hand and seemed to place something in the grasp of the waiting fingers. Saunderson gasped in amazement as the arm was instantly withdrawn. Clutched in the hand of the unknown girl was a yellow rose.

An instant later the arm reappeared. Something, though what it was the sur-

prised spectator could not tell, passed from the hand into that of the waiting shadow below, and then the window closed.

In the course of the twenty-eight years he had spent in this world Terence Saunderson had met many people. He had used his eyes to good advantage, and at one time or another he had seen these people do strange things. But in all his experience there was nothing similar to the scene he had just witnessed.

As the arm reached out expectantly into the blackness, Terence caught the sparkle of a ring on a finger and the sheen of an evening gown behind. Quite obviously the woman who had been waiting within for that yellow rose was a person of position in the world. For a second Terence almost believed—but that was nonsense, of course. And it was equally obvious, as he left the shadow of the wall and crossed the street, that the donor of the yellow rose was a man of no position at all.

The shabby appearance, which had first awakened Saunderson to attention, was not improved by a closer view. The shoes were worn and muddy, the shapeless clothes above them an utterly inadequate protection against the cold, and the battered derby on the man's head was nothing short of disreputable. From his dress the man might have been a mechanic, long out of work and fallen upon evil times.

Saunderson was still standing there, when the man passed him. He shot one suspicious glance at the young fellow, who was making no effort to conceal his interest, and then walked quickly on.

For an instant Saunderson was tempted to stop him. The unwelcome possibility that it might have been Mary on whom he had bestowed the rose refused to be dismissed from Terence's mind. If it was she, then he wanted to know what the deuce the fellow meant by giving flowers to the girl with whom he, Terence Saunderson, was in love.

Common sense came to his rescue before he had taken more than one step after the retreating figure. It was none of his business after all. There were other girls than Mary in that house who were dressed in evening gowns, and every one of them was at liberty to select her friends without consulting him. Also, if the individual who had just passed was eccentric enough to prefer to spend his money on yellow roses instead of a new hat or an overcoat, it was not Terence's money.

Still, it was strange—very strange, the young man thought, as he rounded the corner and entered the house of John Rockland, Mary's guardian. It was later than he had imagined. From the long drawing-room at one side came the sound of conversation, and at the back of the hall he saw servants busying themselves with preparations for the supper that was to come. It did not seem credible that any one here should take a personal interest in the poverty-stricken lurker on the wind-swept street outside.

Still seeking some plausible explanation of what he had seen, Saunderson made his way slowly up the stairs. Halfway up he stopped abruptly. Through an opening in the portières, dividing it from the hall, a small section of the drawing-room was visible.

As he glanced within, Terence saw Mary Dunston pass quickly across his field of vision. She was gone in a second, but after that one glimpse Terence mounted the stairs still more slowly than before. Could it really have been a yellow rose that he fancied he had seen at her breast?

In the room reserved for the men's hats and coats Saunderson turned over his belongings to the servant in charge, and then, to the intense astonishment of that worthy, threw open the window and thrust out his head. No rose came to him. At his feet lay Irving Place, as wet and gloomy as ever, but deserted now.

No explanation was to be found there. The little drama, of which he had been the only spectator, had but one act apparently, and that was over. He had closed the window, but was still within the room, when the door was flung open, and his hostess burst in upon him.

"Where is Mr. Rockland?" she gasped. "I must see him at once. Send for Mr. Rockland."

The servant was nearer the door than Terence, and, with a formal, "Yes, madam," which contrasted oddly with his astonished face, he departed on his errand. Utterly ignoring her guest, Mrs.

Rockland stood still in the middle of the room, wringing his hands.

"Who could have taken them?" she wailed. "Where can they be? And he will be furious—I know he will. It wasn't my fault. I locked the safe. I know I locked it. And now—"

"My dear Mrs. Rockland," Saunderson interrupted the flood of distress. "What is the matter? Can I help you?"

"My jewels!" moaned Mrs. Rockland. "My jewels!"

"Yes?" Saunderson's tone was sympathetic, for the woman's grief was real, if rather ludicrous. "Your jewels?"

"They're gone—lost—stolen!"

Terence stared at the sobbing woman, and gasped. A diamond necklace was around her somewhat heavy throat, and her fingers were covered with rings. Could she have lost her mind? Personally he had always considered her the personification of the stolid commonplace.

"But, my dear Mrs. Rockland," he murmured, vaguely conscious of the necessity of soothing her, "your jewels are quite safe. You have them."

"Where are they?" she demanded, looking at him with tear-dimmed eyes. "You know where they are? Why have you taken them?"

Terence started back in dismay. The woman was certainly insane, and he was to be made the victim of her vagaries.

"My dear Mrs. Rockland," he murmured for the third time. Then, pulling himself together, he spoke as quietly and convincingly as he could. "You are wearing your jewels. They are quite safe."

"Oh, no, no, no!" The wild hope which had leaped into her face vanished, and she began to weep afresh. "You don't understand. These are nothing. It's the others. They were in the safe, and now they are gone."

Saunderson came to his senses. His hostess had been robbed, not of her reason, but of her gems. If they hoped to capture the thief they must act quickly.

"Show me the safe!" he cried. "Is it in your room?"

"Yes—here!" Mrs. Rockland rushed out of the door and, with Terence at her heels, ran down the hall to a large bedroom at the front of the house.

It was in wild disorder. The drawers had been pulled from the bureau, and the contents scattered about the floor. Every nook in which it was physically possible to put a bag of jewels had been ransacked. The search had been at least thorough, though why any one should imagine that the robber would have hidden his booty there Terence could not guess.

In one corner stood a small safe, the iron door wide open. Dropping on his knees, Saunderson examined it. Within were a number of documents and account-books, but the shelf where Mrs. Rockland tearfully assured him the gems had reposed was bare. The safe itself, he thought, was uninjured. His examination was a short one, however, for a hoarse voice sounded in his ear.

"Clara, what does all this mean?"

Jumping to his feet, Terence faced his host. At no time had he ever greatly admired John Rockland, and now he felt a positive distaste for the man. Domineering and aggressive, Rockland's face was a match for his heavy frame. On the thin upper lip a slight gray mustache did not hide the hard lines of the mouth, and there was no gentleness in the cold blue eyes. In commercial circles he was reputed both able and successful, but Terence did not envy his wife as he scowled upon them from the doorway.

"What is it, Clara? Why have you sent for me, and what is all this?"

Rockland's eyes swept in obvious displeasure over the disordered room. As his wife hesitated for a moment it flashed over Saunderson that at the bottom of her heart she feared her husband's anger more than she mourned the loss of her jewels. But there was no help for it, and she took the bull by the horns.

"My jewels, John—they're gone. Somebody's stolen them!" Standing bolt upright, in the center of the surrounding chaos, Mrs. Rockland was the picture of despair. "I locked the safe. I know I—"

"Robbed! Nonsense! Let me see."

Interrupting his wife without ceremony, Rockland pushed past Terence and peered into the safe. For a moment he frowned at the black interior, then he stood erect.

"They're gone," he said slowly. "That's quite evident."

"But, John, who could have taken them?" Mrs. Rockland's voice rose shrilly. "I locked the safe yesterday. These were in the bureau drawer"—she touched the gems she wore—"and I put them on to-night. And then I wanted something, and when I opened the safe just now they were gone. Who could have taken them, John?"

"Don't be silly, Clara. How do I know who took them? And don't shout so. They will hear you all over the house."

"That's just it," put in Terence. "Hadn't we better give the alarm and—"

He stopped short. For the first time that evening Rockland was looking at him, and with no pleasant greeting on his face.

"Good evening, Mr. Saunderson," he said. "How did you get here?"

"I came to help Mrs. Rockland," retorted Terence hotly. "She needs help. I'll go for the police."

He took a step toward the door, but Rockland did not move from his path.

"I think not, Mr. Saunderson," he said. "When it is advisable I will telephone. I do not wish my guests to be troubled."

"It's no trouble," cried Terence, too eager to aid Mrs. Rockland to heed his host's coldness. "Besides—"

He stopped again. He had distinctly seen the white arm give something in exchange for the yellow rose, and he could not rid himself of the idea that the arm might have been Mary Dunston's. He did not know, but he would not have dragged her name into the affair for all the jewels in the world.

"Well, Mr. Saunderson, besides what?" Rockland's words struck Terence like a bucket of cold water. Even if he had been robbed, the man might be decently polite, especially as he revealed no other marked evidences of agitation.

"Nothing," said Saunderson shortly.

"Ah!" There was a quite perceptible sneer in Rockland's voice. "Then I think we had better begin by questioning your maid, Clara."

His wife rang the bell, and then, save for the sound of Mrs. Rockland's sobbing, there was silence in the room. Rockland took no further notice of the young man, but Saunderson, unaccustomed though he was to rudeness, was too vitally interested in anything which touched Miss Dunston's life to take his departure.

From below came the sounds of the arriving guests, coming now in a steady stream. Terence glanced at the distracted figure of the hostess, still standing in the middle of the room. The reception, he thought, was not predestined to success. The same thought seemed to come to Rockland, for he suddenly raised his head.

"You had better go down and welcome these people," he said. "I can attend to this business. It's no good crying over it."

"Oh, I can't yet," sobbed his wife. "I must know what Louise says. Here she is."

What Louise, the maid, knew, was learned quickly enough. The night before madam had taken off the jewels which she now wore, and had put them in her bureau. It was too much trouble, she had said, to unlock the safe. This evening, when she came to assist madam to dress, she had put on the same things.

The safe was locked then, she thought, but she had nothing to do with that. How did she know? Had she not always been particular never even to go near it? But, oh, if it was true that all madam's beautiful, ravishing gems were gone, what an outrage! What an abominable crime! What—

"Be still!" thundered Rockland. "Do you want to disturb the whole house? If that is all you know about the matter, you may go."

As the door closed upon the excited maid Rockland turned to his wife.

"This disturbance is useless, Clara," he said. "Your guests are down-stairs, and there is nobody but Mary to receive them. You must go down at once. Somebody has been very careless, if not worse, and I will find out who. In the meantime you can do much more good downstairs than here, and you, too, Mr. Saunderson."

"Oh, I wouldn't think of the other people," cried Terence. "They will understand. We mustn't lose any chance of getting back Mrs. Rockland's things."

Rockland regarded him with a distinct frown. Then he said, with cutting sarcasm.

"I think, Mr. Saunderson, that I am fully as much interested in the recovery of those jewels as you can hope to be. In the meantime, I am more interested than you in seeing that when I invite people to my house they are properly received. Clara, you will be good enough to go down at once. They must have begun to wonder already at your absence."

CHAPTER II.

Terence is Puzzled.

A LESS sensitive man than Terence Saunderson could not have ignored the dismissal. In obedience to what amounted to an order to leave the room and attend to his own affairs, Terence walked into the hall, and the door closed behind him.

He did not descend at once, however. Instead, he returned to the dressing-room, there to meditate undisturbed over several curious ideas which had entered his brain. Was there any connection between this robbery and the scene he had witnessed on Irving Place? And whether there was or not, why on earth did not Rockland raise a row, call in the police, search the servants, search everybody, do something?

It was all very well to care for the comfort of one's guests; but in the business world no one had ever found John Rockland tender-hearted when his own interests were at stake.

Saunderson had lighted a cigarette to assist him in grappling with these problems, when he became aware that the lackey was regarding him curiously. After finding Mr. Rockland, the man had returned to the scene of his duties. Now, being human, although in livery, he was eager to learn more of the cause of the disturbance.

"Beg pardon, sir," he said at last "but did I hear right? Has Mrs. Rockland been robbed?"

"I believe she has," returned Terence, still absorbed in the unwelcome puzzles forced upon his attention.

"But why doesn't some one run for the police? Why don't they close the doors, sir?" asked the footman.

"That is precisely what I want—" For the third time that evening Saunderson broke off abruptly. Obviously he could not discuss his host's affairs with his host's servants. "Now that Mr. Rockland knows of it, doubtless he will take the proper steps," he added rather stiffly.

Then, in order to avoid further blunders, he made his way down the stairs and into the drawing-room.

His scheme to see Mary by anticipating the bulk of the party had been ruined by the robbery. The rooms were already filled, and the buzz of many conversations blending into one great volume of sound assailed his ears as he pushed aside the portières and entered.

A trifle dazzled at first by the lights and the crowd, Saunderson stood for a moment striving to pick out the figure of Miss Dunston. Gradually it dawned upon him that she was not visible from where he stood. Yet he knew that she was present somewhere, for he had already seen her. Consequently, she must be in the rear room.

"And that," thought Terence, as he began to edge past groups of acquaintances, "is the room from which the arm came. Oh, what rot! She wouldn't want to sit there indefinitely, anyway. Let's be sensible about the thing."

"By all means, Mr. Saunderson, if we can; but do you always talk to yourself? That is a poor way to be sensible."

Terence turned with a start to find a young girl at his elbow.

"I did not see you, Miss Wheatley," he stammered. "I was thinking nonsense, and talking it, too, I fancy."

"Not at all. I heartily agree. Do let us be sensible. Well, I hope you approve, Mr. Saunderson."

As she stepped back with a mock curtsy, Terence awoke to the fact that he had been staring—staring openly and rudely—at her dress. There, fastened in the white waist, was a cluster of yellow roses; and it was Edith Wheatley, and not Mary Dunston, to whom he had been talking.

Saunderson reddened as the girl laughed at him.

"I was thinking of something else," he blurted out, and then joined in the girl's laughter at his own expense. "I

seem to be moon-struck to-night, but I fancy I will recover in time. By the way, Miss Wheatley, do you often wear yellow roses, may I ask?"

The girl looked at him in frank surprise.

"I don't think you have completely recovered yet," she said. "However, if it interests you to know, I do wear them quite often—whenever I can get them, in fact. I am very fond of them for various reasons."

Terence followed her with his eyes as she moved slowly away. He had made rather a fool of himself, he knew, but he was not thinking of that. Miss Wheatley was tall and so slender that it would be more accurate to describe her as thin, with a great mass of light hair as her most conspicuous claim to beauty. Whoever else it might have been, it certainly was not she whom he had seen so indistinctly at the window.

More bewildered than ever, Saunderson pursued his quest of Miss Dunston. As he passed through the doorway of the second of the two drawing-rooms, he saw her seated between two of her friends in the bay of the large window. At the sight Terence halted in incredulous amazement. All three wore clusters of yellow roses

"Great Scott!" Terence moved into a sheltered nook and studied the trio. "Great Scott! If that fellow's been handing up roses to the whole outfit, no wonder he can't afford an overcoat. Confound him, though! What right has he to be giving *her* roses?"

Rage at the thought was more powerful than curiosity. Without striving to penetrate further into the riddle, he made his way to the window-seat. Three minutes after he appeared before them, Mary's two companions discovered important business elsewhere. For the moment, at least, Terence had her to himself. After all, receptions have their uses in this world.

There were a thousand things he would have liked to say; a hundred he had intended to say. He said none of them. Instead, he merely looked at her until common politeness compelled him to desist. Then, mumbling something incoherent, he took his seat beside her.

"You're very late, Terence," she remarked, looking past him down the room. "Are you so busy nowadays that you can't leave work until this hour?"

"I was detained," he said; "nothing of importance, though!"

Somehow he could not bring himself to talk of the robbery or of the rose. As he looked down at the small, delicately chiseled features, at the slight flush which had risen when he first appeared, at the long lashes under which the dark eyes were hidden, the shadow of suspicion seemed to him a crime; the half formed thoughts which had passed through his mind in the dressing room fifteen minutes before, brutal insults.

"If I had thought that I would be able to see you this way," he said slowly, "I should not have wasted so much time in coming. And I can't, after all. Look at this!"

Advancing toward them was the short, rather shapeless figure of Francis Rockland, the heir of the house. Fat, pink-and-white cheeks lent a curious, child like appearance to the insignificant, good-natured face. No stranger would ever have guessed him to be the son of his father. Even the fighting gleam in the eyes of the veteran warrior of business had been transformed in his son into a baby-blue, accentuating the impression of an overgrown child moving without comprehension through a world too complex for his intellect to grasp

To Terence he was merely an irritating nuisance, one of the many obstacles which kept him from monopolizing Miss Mary Dunston. At times he had fancied that old Rockland would be glad to have his son marry his ward; but the thought did not trouble him. It was impossible to regard the young man as a serious rival. Terence was not conceited, but a normal amount of self-esteem made jealousy of Francis an absurdity

At the moment, however, Francis himself appeared to be taking something quite seriously, for his round, chubby face bore a troubled look.

"There's the deuce and all to pay upstairs," he began without preliminary greeting. "Mother's lost her jewel-and the governor's in a rage; swears it was gross carelessness—you know how he goes on. Hallo, Saunderson! You know about it, don't you?"

Terence nodded, his eyes fastened on the girl's face. At Rockland's first abrupt words she had gone white; now she half rose from her seat, her dark eyes wide open. "Robbed!" she breathed, "Mrs. Rockland robbed! Impossible!"

"It's not impossible at all," retorted Francis. "Haven't I just told you it happened? Saunderson knows it, too."

"Is it true, Terence?" Mary turned in unconscious appeal to the broad-shouldered man by her side. One glance at his face told her the truth. "Poor Mrs. Rockland!" she cried. "I must go to her at once. Why didn't you tell me before?"

It was a question that Terence would have found difficult to answer. Fortunately, he was not compelled to then. Before he could open his lips, or Mary take a step, young Rockland stepped in front of her.

"Hush!" he said. "The governor sent me to tell you particularly not to make a fuss. He doesn't want any of these people to hear about it; I only found out myself by accident. All he wants you to do is to help the mater look after the show. See you later."

As he turned away Mary sank back on the window-seat. "Poor Mrs. Rockland!" she murmured. "She will feel it dreadfully. Why didn't you tell me?" she demanded again of Saunderson as he stood above her.

"There was hardly time," he replied, for lack of a better excuse.

He did not have the courage to tell her that he thought it was her part to explain, not his; that he would be glad to know why she received flowers from vagabonds, and gave presents to them in return; why Rockland did not wish any fuss to be made over the lost jewels; why he should be in a rage now, when he had been as cold as ice half an hour before; what, in short, was the reason for all the things which had happened in the house that night which he did not understand. He did not have the courage to ask any of these questions; he merely mumbled: "There was hardly time."

"Time!" echoed Mary. "You came in as though you had plenty of time, and you said that nothing important had detained you. I call it pretty important for Mrs. Rockland to be robbed, even if you don't. I am going to find her."

Saunderson made no attempt to placate her. Nothing was further from his desire than to interfere again with the Rockland affairs, and he had no reasonable explanation to offer for his seeming indifference. But as his eyes followed the white-clad figure passing down the room, conviction chilled him.

"It was she," he muttered. "There is nobody in the world like her, and it must have been she. But it's absurd. Mary mixed up with thieves—that's nonsense."

Nonsense though it might seem to Terence Saunderson, the cynical world of police stations and newspaper offices, that world which is no respecter of persons, and demands more reliable evidence than a lover's worship, might not have rejected the supposition so scornfully. For Mary Dunston, the daughter of Rockland's old partner, was known to be practically penniless, dependent upon the generosity of her guardian for her bread and butter, and the roof over her head.

At one time her father had been considered a well-to-do man, even as money is reckoned in New York, but his skill in preserving had apparently been less than his success in acquiring. At his death all he could do for his children's welfare was to entrust them to the care of his partner.

And old John Rockland was no easy man to live in peace with. If the gossips of the town were to be believed, he had already driven Mary's brother, Paul, from the house. Certainly the young man had departed with the scantiest of farewells. If Rockland had also turned against her, it was not incredible that she might think of helping herself.

To suppose that Saunderson, groping in his mind for some clue to the strange incidents of the evening, followed any such argument as this would be to do that young man a gross injustice. Far more than a coincidence and an unexplained conversation with a shabby unknown were needed to shake his confidence in the girl of his choice, or to admit the possibility of her being at fault.

But his mind was as keen as his faith was strong. Whether he chose to confess it or not, even to himself, he knew that there was something peculiar about the night's occurrences. It was, of course, Rockland's privilege, though it was scarcely like him, to think more of his guest's enjoyment than of his wife's diamonds. It was perfectly proper for any one who so desired to wear yellow roses, and to obtain them where they wished; but still—

"I'll find out about those roses," said Terence aloud, and strode away in search of Mary's friends.

Miss Wheatley he saw and avoided. He had already asked her once about the flowers and obtained no satisfaction. To return to the subject would betray what must seem to be impertinent curiosity. This time he would try Lucy Mortimer. If, in the intervals of joking with that vivacious young lady, he did not acquire some information, he was a poor diplomat indeed.

Warned by experience, Saunderson was in no haste to approach the subject even after he had found her. It was not, in fact, until the conversation appeared to be lagging that he ventured to remark as though in jest

"Since when have yellow roses become so pronounced a favorite?"

"Since I chose to wear them, of course, Mr. Saunderson. When did you suppose?"

"Then you are responsible for this sudden outburst of yellow to-night?" asked Terence.

"Not in the slightest," replied Miss Mortimer. "These, I would have you know, are a present."

The vision of a shivering, coatless individual, adrift in the cheerless gloom of a November night, making endless gifts of yellow roses to prosperous young ladies, rose before Terence to the exclusion of all else.

"A present?" he murmured stupidly. "From whom?"

Lucy Mortimer drew herself up to the extreme limit of her few inches.

"Really, Mr. Saunderson," she cried in mock indignation, "is it so strange that I should have a present? Perhaps you fancy that you are the only man in New York who sends flowers. Have you seen Mary this evening? She has them, too."

There was a mischievous twinkle in Miss Mortimer's eyes. Terence's devotion to Mary had been too open to escape the notice of her friends, and the opportunity to annoy him was irresistible. But at sight of the glum face before her the girl relented.

"Come, come, Terry," she said, dropping the formal title which she had used in fun, "everybody says you like a joke, but if this one worries you so much I'll tell you. Mary gave them to the girls who dined here to-night. Now are you satisfied? And I'll tell you something more you ought to be glad to know. Yellow roses are her favorite flower, she says. Good-by."

CHAPTER III

The Man with the Boutonniere.

OPPOSITE a florist's window Saunderson halted in his walk up Fifth Avenue to examine the display within.

"I wonder if I dare do it," he thought. "Yellow roses are her favorite flower, she says. Well, I want to send her what she likes, but then— That certainly was a yellow rose the fellow landed up. I'll put my foot in it badly if I don't look out.

"I don't want to have anything to do with his infernal flowers, anyway," he went on, swept by a fit of natural jealousy. "I'll send her some of my own, and they won't be yellow. I wish I knew what it was all about. I don't like it, I know that."

He turned away to resume his walk, his mind toiling fruitlessly, as it had been throughout the day, to reach some explanation of the scenes of the night before. The Rocklands he had been compelled to leave with no further light to guide his speculations than the scanty information vouchsafed by Lucy Mortimer.

He had scanned the morning papers thoroughly, but beyond a short paragraph stating that John Rockland had reported to the police the loss of valuable jewels belonging to his wife, there was no mention of the robbery. If Mr Rockland really was anxious, for rea-

sons unknown to Terence, to keep the matter from the attention of the public, he was meeting with his customary success. Of the donor of the rose there was naturally no mention at all.

Perplexed and uneasy, Terence walked slowly on, his eye passing unheedingly over the Saturday afternoon sea of humanity flowing up and down Fifth Avenue. At Thirtieth Street he awoke from his abstraction with a violent start. Almost a block away he had caught a glimpse of a spot of yellow in the mass of dark coats advancing toward him. A second later he was face to face with a man who wore a yellow rose in his buttonhole.

Saunderson stood stock-still, staring at the man as he walked by with averted face, studying the passing procession of carriages and automobiles. Not only had the thought of yellow roses so possessed his brain that he would have stopped to look at one anywhere, but in this case there was something distinctly incongruous about the fellow's wearing a boutonnière at all.

Tall, well-built, clean-shaven, he was a sturdy specimen; but, save for that one flower, no care had been bestowed upon his appearance. The plain black suit he wore had not been pressed for many a week; the gloves were old and stained; the shoes unpolished. Many men whom Terence knew were quite as careless in their dress, but they did not bedeck themselves with roses.

As he stared after the retreating figure, Terence's heart gave a sudden leap. Immersed in his thoughts, he had passed without noticing a large touring-car drawn up by the curb. Now as he looked back he saw, seated alone in the tonneau, Mary Dunston.

Instantly Saunderson hastened toward her, only to come once more to an abrupt halt. Standing by the side of the automobile was the man who had just passed him. This time there could be no mistake. Saunderson distinctly saw him take the rose from the lapel of his coat and toss it into Mary's lap. An instant later he had received something from her in exchange, had stuffed it into his pocket, turned the corner, and was hastening east along Twenty-Ninth Street.

Reluctant to believe his own senses, Saunderson stared at the transaction. Then anger swept him forward. He would have no lurking vagrants and shabby unknowns exchanging presents with the girl he loved. And he would deal with the man. Mary might explain afterward, if she cared to. Now he would learn from the fellow himself who he was, and what he meant by intruding himself upon her.

It was hardly coherent reasoning. Under normal circumstances Saunderson, scrupulous never to intrude himself, would not have dreamed of challenging Mary's right to do whatever seemed proper in her own eyes. As for stopping a total stranger on the street to demand from him his name and business—his friends would have laughed at the man who told them that Terry Saunderson had done that.

But Saunderson was in love; he was jealous, and for nearly twenty-four hours he had been tormented by doubts and misgivings. He saw before him the key to the hateful mystery, and he rushed to seize it.

By the gate of the Little Church Around the Corner he came up with his man.

"Hold on there, I want to talk with you," he snapped out, not stopping to consider the rudeness of the demand.

The stranger wheeled about in evident surprise. There was a frown on the square-jawed, determined face, and the gray eyes held no friendly light as they regarded the excited Saunderson.

"What do you want?" he said shortly. "I don't know you."

"That's it," retorted Terry. "I don't know you, either, but I want to know who you are and what you mean— By Jove! You're the man who was outside the window last night!"

Saunderson stopped in surprise at his own discovery. The man's appearance was so different, and Terence's attention in the few moments which had elapsed since he had first seen the spot of yellow had been so riveted upon the rose and Mary Dunston that he had not thought to connect this stalwart stranger with the slouching night-hawk of Irving Place.

He had seen but indistinctly in the darkness of the night before, it is true,

and might have hesitated to swear that he now confronted the same person. But in his own mind there was no doubt. On the heels of the conviction came the revolting corollary: Mary Dunston was secretly acquainted with a man who found it advisable to disguise himself.

While Terence, dumfounded by the truth which forced itself upon his unwilling mind, gaped at him in helpless consternation, the stranger turned on his heel and pursued his way along Twenty-Ninth Street. He had gone but a few steps, however, when Saunderson sprang after him, the slave of one dominating purpose.

"Stop! you!"

Terence was by his side now, and the stranger had no choice but to halt once more.

"Who are you?" Saunderson demanded. "What do you mean by giving her flowers?"

In reply the stranger suddenly thrust out his elbow, striking the young man in the throat and forcing him to one side.

"You attend to your own affairs," he growled, and for the second time moved away.

He did not get far. Thoroughly enraged before, and driven into frenzy now by the stranger's show of violence, Saunderson jumped in front of him

"Listen to me!" he cried. "I want to know who you are, and why you are hanging about Miss Dunston. I saw you give her the rose last night, just before the jewels were stolen. Did you take them? Tell me what it all means, or I'll call the police."

For an instant the stranger glared at his infuriated questioner, his own face black with wrath and astonishment. Then, as Terence ended his tirade, he answered suddenly and effectively. Without moving from his stand upon the pavement, and so quickly that the young man could not even attempt to protect himself, the donor of the yellow roses sent a vicious uppercut crashing full into Saunderson's face

Dazed and helpless, Terence staggered back, his hands mechanically rising to the traditional attitude of defense. An instant later a stunning blow between the eyes stretched him on his back upon the pavement.

Hard knocks were no new experience for Saunderson. In the many years in which he had boxed regularly for amusement and exercise he had mastered the first principle of the game—to take his punishment with a smile. In a moment he was on his feet, confused but determined, ready and eager to fight it out, then and there, with his unknown rival.

The battle was over, however. There were no more blows for him to parry, no adversary for him to attack. Slowly Terence realized the fact, his fists unclenched, his arms dropped to his side, and he stared about in search of his enemy.

Turning the corner of Madison Avenue, Saunderson saw him, marching steadily along as though knocking men down formed a part of the ordinary routine of his life. Leaving his hat and stick where they lay in the gutter, Terence darted after the man, bent solely upon forcing him to an immediate and physical accounting.

He never reached him. At the corner a huge hand fell upon his shoulder, and he was jerked almost off his feet.

"Where are you going, young feller?" growled a deep voice

Before him loomed a massive policeman, suspicion written plainly on his heavy features. Terence Saunderson, as reputable a young man as there was in the city of New York, was in the grip of the law. The full significance of the situation did not dawn upon him at once. Twisting about in his captor's grasp, he strove to free himself.

"Catch him! Catch him!" he shouted. "He's the thief! I know he is!"

The bluecoat glowered down upon his prey. "Whatcher talkin' about?" he demanded roughly. "There ain't no thieves here."

"It's the Rockland burglar!" cried Terence, still striving to shake off the other's grip. "That's the man who stole the jewels!"

The policeman looked up and down the avenue. A few orderly citizens were making their way along the sidewalks; a carriage or two rolled along the street The only disturbing element visible in the peace of the city was the noisy young man in his grasp.

"You seem to know a whole lot about

it," he growled: "and you were in an awful hurry. Who's chasin' you?"

"You idiot!" roared Saunderson, for the first time awakening to the fact that it was he who was under suspicion. "The man will get away while you stay star-gazing here. Let me go!"

He made one desperate futile effort for freedom. The huge hand merely tightened its grip, and a new light shone in his captor's dull eye.

"That's too old a game," he said. "I didn't come on the force yesterday. The Rockland burglar, you say? Well, nobody but you knows who that is, and I guess you can explain to the sergeant how you know. Tryin' to resist an officer, too!

"Keep quiet, now, or I'll fan you good. Where's your hat? Don't you wear one when you go chasin' thieves? The station-house for yours, young feller."

CHAPTER IV.

Terence Asks a Few Questions.

TERENCE SAUNDERSON walked out of the station-house a few minutes after his captor had marched him in—enraged, humiliated, and baffled. To suffer arrest was a new experience for him. The sergeant, to be sure, had refused to hold him, and had even come as near apologizing for his subordinate's error as official dignity would permit, but that was small recompense for the disgrace of being dragged through the streets like a common pickpocket.

And, in the meantime, the donor of the yellow rose had vanished among the millions of the city. There was small chance of Terence's ever coming upon him again.

He had made a fool of himself. That was the conclusion Saunderson reached as he stood on the corner, striving to regain his habitual self-control, and wondering what he should do next. The conviction that he had only himself to blame did not bring comfort—it seldom does. He had allowed unwarranted suspicion to master him, he had interfered in matters with which he had no concern, and he had been properly rewarded.

Well, he would take a fresh start. He would think no more of yellow roses and their giver. Also, he would call on Mary. It was only common politeness to inquire about Mrs. Rockland's loss.

Miss Dunston was in, the maid said. Apparently her excursion in the automobile had been a short one, and in a few minutes she joined Terence in the drawing-room. She did not look particularly happy, he thought. There was an unwonted droop to the slight figure as she shook hands with him, and the look of pain and weariness he saw in the dark eyes she raised to his went straight to his heart.

"What is the matter?" he asked abruptly.

The girl struggled hard to smile as she seated herself.

"Matter?" she said. "Why, nothing. Of course, we are all very much upset about the jewels. It's very hard on Mrs. Rockland. They were worth a great deal, and, besides, she was very fond of them. Her husband gave her most of them, you know."

Saunderson sat bolt upright and looked at her. He had come into the house with the firm intention of avoiding all mention of the events which had so perplexed him for twenty-four hours. He was determined to sweep them from his mind; to set back the clock, as it were, by sheer will power, and restore the situation as it had been before that white arm stretched forth into the blackness of Irving Place.

With the first glimpse of the pale, tired face before him his good resolutions fled. Trouble of some sort had come to the girl. She was suffering; she needed help, and he must help her. To suppose that it was sympathy for Mrs. Rockland which had brought that look into her face was nonsense. Mary was kind-hearted, he knew, but there were limits even to her capacity for kindness.

"There is something more than that," he said gently. "You are unhappy. Won't you tell me why?"

The girl looked away from him, through the window at the children playing in Gramercy Park. She did not answer at once, and as Terence studied the averted face the conviction grew that she was shrinking before impending disaster. When she replied at last there was a

forced smile on her lips, but her eyes did not meet his.

"What else could there be? You are quite melodramatic this afternoon, Terry."

Saunderson rose to his feet and walked around in front of her, so that she could scarcely avoid looking at him.

"I am not melodramatic," said he. "I am too much in earnest for that. What's the use, Mary? It's not the jewels; I know you too well to believe that. Won't you tell me what it really is?"

For one brief instant, as Miss Dunston looked at the strong, sincere man standing above, the pain in her eyes vanished. The forced smile grew tender, and a flush rose in her cheeks. But it was for a second only. When she deliberately looked away from him the second time her misery was more apparent to Terence than ever.

"Won't you tell me?" he insisted. "There is no one who has a better right to know—no one who cares as much—"

"I know, Terence"—the girl interrupted him in a voice so low that the words hardly reached his ears—"I know. That is why I can't tell you."

It was more than she had ever admitted before. Even then, when he had no thought of himself or of his suit, Saunderson realized it. He took one step toward her, his face alight with hope.

"Mary!" he cried, and then stopped.

Without even turning her eyes to him the girl had raised her hand to check him.

"Don't, Terry," she murmured. "Don't add to it. It's all I can bear now. Don't ask me again. I can't tell you anything."

Saunderson gazed down at the slight figure, at the face resolutely turned from him. He could not leave her that way. Sooner than do that he would gather her in his arms and carry her bodily out of the house. If he could not help her what was he in the world for?

But the girl did not move, and Saunderson was a gentleman. She had asked him not to interfere, and he was bound to respect her wish. Very slowly he turned and moved over to the other window, and silence fell upon the room. The girl sat still in her armchair, her elbow on her knee, and her chin buried in her palm.

At the window Saunderson gazed blankly at Irving Place, his eye involuntarily fixed upon the spot where he had detected the lurker of the night before. Could it be that fellow who had brought this wretchedness to Mary? Saunderson remembered how he had had him in his grasp and let him go, and his fists clenched. If he ever came upon the brute again he would not let him escape so easily.

But it might not be that man at all. He knew nothing, and how could he help without knowing? Terence swung away from the window, resolved to make one final effort. He would tell Mary what he had seen. Then she could tell him more or not, as she chose.

"Mary," he began, "I'm not going to trouble you, but you ought to know this. On my way here last night I saw a man outside."

The girl faced him suddenly, with startled, wide-open eyes, but Terence went steadily on as though he had noticed nothing.

"He handed a yellow rose through the window to some one inside—I think it was you—and received something in exchange. This afternoon, on Fifth Avenue, I saw him give you another rose. I ran after him, but he knocked me down and got away, while a policeman held me up."

Saunderson's story was told, and he stopped. While he was speaking the girl's eyes had never left his face. Now for the third time she looked away, refusing to meet his gaze. A long pause followed before she asked:

"Why did you run after him?"

Saunderson flushed. He was thoroughly ashamed of the vague imaginings—it was hardly just to call them suspicions—which he had not been able wholly to exclude from his mind, but sincerity compelled him to acknowledge them.

"Because," he said slowly, "I was jealous, and after he knocked me down I lost my head. Then I cried out that he had stolen the jewels."

"Terence!" The girl was on her feet, facing him, her eyes blazing with insulted pride. "Terence! And you said you knew me? You said you"—she broke off abruptly—"loved me." She

had been about to say, but even in her anger she remembered that that was something which he had never yet mustered courage to put into words.

"I don't know him," replied the young man. "But, Mary, Mary! You know I never suspected you. Would I be here if I had? I could not help seeing what I did. I don't know what it all means, but all I want is to be allowed to help you."

"Oh, Terence, Terence!" The girl flung out her arms in a passionate, vague appeal. The anger had died in her eyes, and in its place there was only dumb misery. "I can't tell you, Terry, but if you only knew you would help him. He didn't steal the jewels. I—"

The sudden outburst of anguish, long pent-up and silent, came to an end as the portières parted and John Rockland entered the room. His cold-blue eyes rested for a moment on the figure of his unhappy ward, then turned to Saunderson.

"Good afternoon, Mr. Saunderson," he said. "I did not know that you were here."

"I did myself the honor to call on Miss Dunston," returned Terence stiffly.

The man's manner annoyed him. In most of the places to which he went he was a more than welcome guest, and, furthermore, he saw no reason for informing Mr. Rockland of his comings and goings.

"Ah," remarked Rockland, "ah."

With no other welcome he proceeded to seat himself in the chair Terence had vacated recently. Once more his keen glance fell upon his ward; then very deliberately he pulled a black cigar from his pocket and lighted it.

Saunderson stared at him in amazement. Such a reception amounted to an insult, and he was unused to insults. But he was also unused to bullying, and he had no intention of acquiring experience at the hands of Mr. Rockland. From that gentleman's demeanor it was quite evident that he wished Saunderson to leave; therefore, Terence determined to stay. He glanced at Mary; failed to gather from her countenance any hint of her wishes, and settled himself comfortably in an adjacent armchair.

"Did you walk up-town, Mr. Rockland?" he asked affably. "The air is fresh after yesterday's storm."

"I did not," answered Rockland shortly. "I have too much to attend to to waste my time in walking."

It occurred to Saunderson that walking was a more profitable use for Rockland's time than interfering with his call; but he kept his thoughts to himself.

"In addition to the pleasure of seeing Miss Dunston," he remarked, "I was naturally anxious to know if any clue to the man who took the jewels had come to light. Have you learned anything since last night?"

Rockland took the cigar from his mouth, and favored his questioner with something much like a scowl.

"I have not," he answered more shortly, if possible, than before.

Then he replaced the cigar in his mouth, and smoked on as though he were alone in his office. Down-town his subordinates might have quailed before such unmistakable evidence that "the boss" was in a bad humor; but if he thought to intimidate Terence by his surliness he had mistaken his man. Instead, there flashed before Saunderson a vivid picture of the night before; of Mrs. Rockland wringing her hands and sobbing; of Rockland insisting that she attend to her guests and leave the robbery to him; of Francis announcing that the governor had suddenly become violently enraged.

"As far as I was able to judge last night," said Terence calmly, "the safe itself was uninjured. If that is the case, it must have been opened by some one who knew the combination, or knew that it had been left unlocked."

This time Rockland's scowl was unmistakable.

"Are you a detective, young man?" he sneered.

"Oh, no," replied Terence cheerfully, still choosing to ignore the other's rudeness, "but I am naturally interested in the fortunes or misfortunes of my friends. Then, too, you know, I think crime has a fascination for all of us—especially any crime with unusual features. Don't you think so, Mary?"

Absorbed in her own thoughts, the girl had been paying but scanty attention to the conversation. Now startled

by the sudden appeal, she could do nothing but look from one to the other of the two men in some bewilderment mixed with alarm. Her preoccupation had not hindered her from realizing that Saunderson's fluent conversation in the face of repeated snubs must have some purpose, and she knew Rockland too well to imagine that he would stand opposition long, even in the most trivial matters.

"Very likely," she stammered. "I don't think I quite followed you."

"We were discussing the unusual features of the robbery last night," explained Terence. "I am inclined to believe that it must have been what the police call an inside job. What do you think?"

To Mary, her lover's persistence had but one meaning; he must suspect her of having taken the gems. A moment before he had denied it indignantly; but he still harped upon the one string. She was too miserable to be angry; to do more than stare at him with white, drawn face.

As Saunderson appealed again to her, Rockland's eyes rested for a moment on her face. What he read there was known to himself alone; but his eyes narrowed and his lips set as he turned back to Terence.

"What Miss Dunston thinks has nothing to do with the case," he said with cold emphasis. "She was not brought up as a detective. And, to my mind, the most unusual feature of this robbery is the curiosity displayed by those who have no concern in it."

More surprised than angry, Saunderson saw with amazement that Rockland had worked himself into a towering rage. He had deliberately clung to the subject of the robbery, it is true, but the ordinary individual who has been robbed is more inclined to talk about it until he becomes an intolerable bore than to grow indignant when others mention it. However that might be, his host's last remark could not well be ignored.

"If you refer to me," said Terence, rising to his feet, "I might as well tell you that I do not consider my curiosity unusual—certainly not as unusual as your objection to quite natural and harmless inquiries."

"What do you mean by that, sir?" demanded Rockland.

"Just what I say, sir," retorted Saunderson. "You have seen fit to treat me in a most extraordinary manner. If you have any reason for it I should be glad to hear it."

Rockland glowered at him in silence for a moment.

"Young man," he said at length, "I don't explain my actions, nor do I care for natural inquiries about my affairs. If you do not like my manner, I should recommend you to take a very simple course."

"And what is that?" asked Terence.

"To leave this house and not trouble to return to it. Your hat, I believe, is in the hall. Good afternoon."

(To be continued.)

GREATEST ELECTRIFYING SCHEME.

St. Paul's Extension Will Be an Epoch Maker in the History of Railroad Motive Power.

A BIG undertaking that is creeping on almost unnoticed is the St. Paul's extension to the Pacific coast at a cost approaching one hundred million dollars. When the small mileage under electric power in this country is considered, the fact that nearly eight hundred miles of the mountain stretches of this road are to use that motive power is scarcely less than revolutionary.

The Bitter Root Mountains abound in streams that can be harnessed to provide the company's two-hundred-ton motors. One stretch through the Bitter Root range includes a tunnel eight thousand seven hundred and fifty feet long, on which even the construction work is being done by electrical power. This tunnel joins the States of Montana and Idaho.

WHAT'S THE ANSWER?

By the Light of the Lantern

Questions Answered for Railroad Men

ASK US!

I HAVE had six years' experience firing on three different railroads. I am quite a good ways off from promotion. I am qualified to pass any mechanical examination, including air-brake and transportation rules. What railroads in the West or South would afford the chance of securing a position as engineer, or switch engineer? Would I stand any chance on Southern Pacific lines in Mexico? Are chances good now on Western Pacific?

R. M., St. Louis, Mo.

You speak of six years' experience on three different railroads, had this been on one road, you would no doubt have been promoted by this time. It is unfortunate that you have seen fit to change so much, as every move, through the universal seniority ruling, necessitates that you start as a new man, and the time put in is practically wasted, excepting always the experience.

It is practically impossible to hire into the service of any railroad as an engineer, no matter how much preliminary training you have had, even if the latter includes experience in that capacity. You no doubt understand that all railroads make their own engineers from their firemen, and conditions must be very unusual, indeed, to warrant going out of the service for runners. This could only result from the presence of a tremendous volume of business which would exhaust the list of all firemen qualified for promotion, and this is an unlikely contingency in the presence of the prevailing poor business.

There is no chance on the Southern Pacific, and, so far as the Western Pacific is concerned, no operating department has as yet been organized on that road. The only thing you can do in that connection is to wait until it comes into existence, and then make application to the general manager or the superintendent of whatever division you prefer. [illegible] president, Mr. J. Jeffrey, at 195 Broadway, New York, can always advise you as to the probable date of establishment of the operating department.

Train work on the construction department of this, or any other new road, is always too irregular to warrant engaging men to come from a distance, and the places are filled from local applicants whose work is liable to be discontinued at any time. All things considered, we don't think you could do any better than wait patiently for promotion on your own road, especially as conditions do not seem to improve rapidly in the transportation line anywhere in the country.

B. W., Gibson City, Illinois.—We do not think that the employment of the telephone in train despatching will lessen anybody's pay, least of all the station-agent who has practically nothing to do with the despatching, unless the station be so small that he acts as operator also. There will always be plenty of work for telegraphers on commercial wires, even should the use

of the telephone become universal in train despatching; and, although it is making great strides, the latter condition is unlikely for a long time to come.

We don't think that any new device, now or yet to come, will ever cheapen anybody's pay in railroad service. Automatic stokers have not lessened the compensation of the firemen, and on the electric motors of the New York Central and the New Haven the two men in charge receive an amount equal to the pay of the engineer and fireman who formerly pulled these trains with the steam locomotive. See this department for April, 1909, in reply to a correspondent who requested information regarding despatching trains by telephone.

PLEASE state age, and if any trial is needed to become a fireman on the B. and O. in Cincinnati.

(2) Do you have to pass an examination?

(3) If you cannot start as a fireman, in what position can you start to learn to fire?

(4) Name some roads in Cincinnati not strict on age limit.

H. J. R., Cincinnati, O.

(1) Twenty-one years; after satisfying the road foreman of engines, or master mechanic that he is good material the applicant must ride as the third man on the engine for several trips before being placed on the extra list as a fireman.

(2) On the Baltimore and Ohio you must pass a physical examination in addition to the regular eye test, as all employees of that road are members of its relief department. This membership is compulsory, and the physical examination cannot be evaded.

(3) It cannot be learned except as indicated in answer to question one.

(4) They all insist on a minimum age of twenty-one years. If they have any doubt about it, they will not employ you.

P. R., New Britain, Connecticut.—See replies to "H. J. R." above. No matter what school you may graduate from, you must have your trials on the foot plate in actual service as a learner, and a thousand certificates of competency would do you little good unless the engineers and firemen with whom you have been riding will back them up.

WHAT is an equalizer, and where is it?

(2) Where can I purchase a book that describes the different parts of a locomotive, and how it is run?

L. H., Ontario, Cal.

(1) The equalizer is interposed between the driver-springs, pivoted on a fulcrum, and attached at the extremities to either driver spring by what is known as hangers. Its province is to transmit any variation in the load, which without it would fall entirely on one spring, to the other spring, thus allowing the latter to take a considerable percentage of the strain.

Sometimes five or six springs are connected in series through the medium of equalizers between each pair, and thus the life of the latter is greatly prolonged. On an engine with springs arranged above the main frame you may locate the equalizer readily by following the direction of the spring-hangers to the end of the hanger. On engines with springs between the top and bottom rail of the main frame, the equalizers are curved to pass over the driving-boxes, on which they pivot at a point in the center of both the box and equalizer.

This device is almost entirely associated with American practise in railroading. Practically all English engines and those on the Continent have independently hung springs, with no provision to transmit the shocks from one spring to another. This arrangement is criticized severely in this country, but the perfection of foreign roadbeds compared with our own practically counteracts the effect of the lack of equalizers.

(2) Forney's "Catechism of the Locomotive," McShane's "Locomotive Up To Date," and Sinclair's "Locomotive Engine Running and Management," are standard works which will give you a vast amount of information, largely devoid of technicalities. For the first, address *Railroad Age-Gazette*, New York, N. Y., and, for the other two, *Railway and Locomotive Engineering*, also New York.

G. D., Park Avenue.—See answer to "L. H." above. Would recommend McShane's "Locomotive Up To Date" for illustrations of the parts of an engine. The *American Engineer and Railroad Journal* is published at 140 Nassau Street, New York, N. Y. In regard to the greatest speed which can be attained by the Pacific type locomotives of the Alton and Pennsylvania railroads, this is dependent on weight of train, weather, condition of track, etc. They can jog along very comfortably, however, at sixty miles an hour, under any reasonable condition.

M. A. D., Providence, Rhode Island.—Can't locate any road between points mentioned. McGilvray is a station on the Canadian Pacific, in British Columbia, but

it does not appear on the maps which we have. The Canadian Pacific can be reached readily from Spokane, at Kingsgate, by the Spokane International Railway, 140.8 miles.

WHAT is the "blind" end of a baggage car which the hoboes in your stories are so fond of?

(2) What are the duties of an "operator"? Are they similar to mine? I am called train foreman. Duties: Sole charge of trains in station limits and section of line governed by my station. I am a telegraphist, and, incidentally, ticket, baggage, and freight clerk from 10 P.M. to 7 A.M. During day-duty I deal with train and telegraph work only.

(3) In the heading "By the Light of the Lantern" you show a hand lamp with a white light only. Don't American railway men use three lights in signaling by hand (red, green, and white), or do they use a white light for all signals?

(4) If freight-trains are fitted with air or vacuum-brakes, why is a brakeman necessary? Here a train-crew consists of engine-driver, fireman, and one guard to a load of 900 tons, or 100 axles, all stock fitted with automatic vacuum-brake.

A. M. H., Transvaal, South Africa.

(1) Baggage-cars, or luggage-vans, as they are called abroad, when originally introduced on railroads in this country had end doors, and these are still generally retained. On the other hand, the express-cars, intended for the carriage of valuable merchandise, are limited to side doors only, for greater security from theft. The latter cars became known as "blind" baggage because their ends were a blank, not broken by a door, as in the regular baggage-car.

When two of these cars were coupled together a hobo had an enviable place to ride between them, and might get over a long distance without being detected. Of late years, however, the end platforms of these cars have been gradually reduced in width, until now they are practically eliminated all over the country. Hence it is unlikely that the "blind" will occupy a very conspicuous place in future fiction of the rail.

(2) There are no doubt isolated instances on American railroads where an operator, through the pressure of an economical streak on the part of the management, might be called upon to exhibit a portion of your versatility, but such cases are very unusual. An operator, as we understand it, has his duties limited to the key and sounder, although in this capacity he frequently handles both train-orders and ordinary message business. All train movements are handled by the train despatcher, and a station operator seldom, if ever, has any independent authority on the wire. From your interesting letter we gather that you certainly are giving value received to your company.

(3) All hand signals are given with white lanterns; that is, all the general work in a yard at night. Red lanterns are used by flagmen who go back to protect the rear of their train when it stops at an unusual point, or at any point where the stop is of more than average duration. He carries a white lamp also to pick his steps, but swings the expected train down with the red one.

The only instance when a blue hand lantern might be encountered would be on the end of a car undergoing repairs. This is a car repairers' signal, and a car so protected, or by a blue flag by day, must not be struck or moved under any circumstances, as the inference is that men are working beneath it.

(4) On the long and heavy freight-trains of this country which sometimes reach seventy-five cars, and often two thousand five hundred or even three thousand tons, two brakemen are absolutely necessary, although they seldom have any actual braking to do. They have many other duties, however, as there is often heavy switching. Trains have to be cut, cars set off and taken on, and frequently hot-boxes have to be doctored.

The rear brakeman generally acts as flagman, and is kept busy scrambling back to protect the hind end. The front brakeman helps out the fireman by swinging the spout at water stations, shoveling over coal on the tender, and frequently "spells" the fireman for several miles by taking the scoop himself. The freight brakeman is a useful institution, and there is little likelihood that we will ever part with him.

There is so little operation of trains by the staff system here that it has not reached the development which your description implies. We are much interested in what you had to say in regard to despatching trains by telephone on South African railways. It is gaining great favor in the United States, and there is every indication that in time it will become the standard practice.

M. L. C., Plymouth, New Hampshire.—Write *Railroad Age-Gazette*, New York or Chicago, explaining what you want; if they do not carry the book in stock they will get it for you.

C. B. H., Pittsburgh, Pennsylvania.—The master mechanics on the Santa Fe, in the Southwest, to whom you might apply for work as fireman, are: W. George, Al-

buquerque, New Mexico; William Dale, Winslow, Arizona; and J. Wall, Needles, California.

J. G. L., Bellefont, Kansas.—See answers to "H J. R." and "P. R.," this issue. We would strongly recommend that you call personally on some master mechanic in your territory, if your mind is firmly bent on that employment. The station-agent in your town can tell you where they may be found.

It is proper to add, however, that conditions in the railroad world at present are rather discouraging to aspirants for remuneration and preferment. Our strong recommendation would be not to undertake such a move until business improves, which must happen sooner or later.

I AM encouraged by friends to take up a correspondence course in mechanical engineering. What are the duties of one, and what is the highest and lowest salary received by them?

B. A., DuBois, Pa.

The duties of a railroad mechanical engineer are much more exacting than might be supposed at first glance. First of all, with very few exceptions he is in charge of the drawing office, although supported by a chief draftsman. He is under the direction of the superintendent of motive power regarding the standards of the company, and must see that anything approved of, or authorized by, this official is properly incorporated into the practises of the railroad.

He is charged with the exacting work of evolving a new type of locomotive, with often nothing more than a bunch of rough pencil notes as a basis; he must be posted on all master car-builders' standards; on the strength of materials and the manipulation of the same from the standpoint of economy as well as efficiency. There are countless details which need not be elaborated on here. This is a tremendously important position on any progressive railroad, and as men capable of filling it are not numerous, it generally carries a good salary.

We cannot say just what the remuneration is, as it would naturally vary with the size of the office and the policy of the company. However, $175 per month may be set down as the minimum, and, in some cases, this may rise to $500 per month.

Most of the men in this position have had shop experience. Many of them have completed their course as special apprentices, in which opportunity is afforded for experience in all details of shop work, and are graduated M. E.'s besides.

The training is long and expensive, and it does not therefore hold out much encouragement to a poor boy. In replying to your question we have confined ourselves to outlining the duties of this position as they apply to railroad service, as it is not possible in the space at our disposal to depart from the scope of the magazine.

E. H. C., Pomona, California.—With the disability which you mention it would be inadvisable for you to attempt railroading. Even admitting that this did not preclude employment, and we think it would, as many railroads subject firemen to a physical examination, do not overlook the fact that an extra fireman is just as liable to be called to fire a coal as an oil burning locomotive; at least, speaking from experience in a supervising capacity in that section, we cannot recall an instance where a fireman went through his entire experience without many wearying trips with the scoop. The requirements regarding weight and height are flexible. An extreme in minimum would probably be cause for rejection.

WOULD an invention to take on passengers and baggage, and let them off while the train is in motion, be very profitable to railroads?

(2) Would railroads be ready to install any device of this kind?

M. W. H., Pawhuska, Okla.

(1) It would be quite a sight, to say the least. We think, however, that some one is ahead of you on the idea; but this, of course, without knowledge of what your particular method may be. It was suggested some years ago, to obviate the necessity of stopping fast trains, that a rolling platform might be arranged, to contain the passengers' baggage, which would start on its own track in the same direction as the expected train when that train entered the block. It was reasoned that presently the platform and train would be at the same speed, whereupon the passengers would enter and leave the train, after which the platform, electrically propelled, of course, would return to its original location. If you can overdo this for a weird scheme you deserve success or fame at least.

(2) No, for the reason that few passengers could be induced to leave a train at sixty miles an hour, no matter what means might be used. These ideas cannot be taken seriously by one intimately acquainted with the details of railroading, because of insurmountable obstacles, which are not apparent to a layman. We wish you had given an outline of your plan, but if it is anything

like the one referred to, we feel safe in saying that it won't go.

ENGINE 1431 gets orders to run extra west "C" to "L Jct." on train-order schedule, with right over all but first-class trains. Loses 50 minutes waiting for train at "C." At "B I" the time-order is canceled, and she makes up 25 minutes between "B I" and "G L." On pulling into "G L," she finds main track occupied, and order-board against her, but operator pulls board down as soon as she starts in siding. Engineer would not go without a clearance. Was he right?

Further, the main track was occupied by No. 82, a third-class train, whose crew had gone to eat. Had 82 any right to main track? Who would be responsible if Extra 1431 had lost control of her train and hit 82? Conductor of 82 claimed his time-order on Extra 1431 had not been annulled, but he did not go to office on arrival at "G L" to see what the order-board was on for.

J. C. S., Lethbridge, Canada.

The engineer on extra 1431 was correct in his refusal to proceed without a clearance. His primary order received at "C" gave him the right over all except first-class trains. When he saw the order-board against him at "G L" and main occupied, his natural inference would be that the train was superior, as had it been an inferior train it should have been in to clear, according to the orders under which Extra 1431 was running. The right to the main track by No. 82 at that point depends upon the correctness of her conductor's statement. If, as he claims, he had not received annulment of his time order on Extra 1431, he had still forty minutes on her time, but, still proceeding on the assumption that his time-order had not been annulled, he and his engineer would have been responsible had an accident occurred, in that they did not go to the office in the face of the order-board.

The train despatcher would have had equal responsibility for not annulling the time order on Extra 1431. The way you state the case it looks on the face of it as though the train despatcher had failed to annul the time-order of 82 on Extra 1431, and attempted to rectify the mistake at "G L" by holding the order-board on both trains, and running Extra 1431 through the switch and around No. 82.

S. P. R., Portland, Oregon; W. A. H., Catskill, New York, and L. H. B., Newark, New Jersey.—The pay of a Pullman conductor on entering the service has been heretofore $75 per month, advancing to $90 per month after a certain period of service. They are required to secure a bond from the company named on the application form, the cost of which is nominal. It is required that an applicant be temperate, of good moral character, and be recommended by persons of good standing.

All information necessary is set forth on the application form, which may be secured from any district superintendent of the Pullman Company. F. D. Chamberlin is superintendent in Portland, Oregon; R. C. Wagner, at Albany, New York; and E. F. Hilton, D. W. Morrison, and J. A. Rittenhouse, at the Central Railroad of New Jersey, Erie, and Pennsylvania depots, respectively, in Jersey City, New Jersey.

C. E. W., York, Pennsylvania.—Every railroad entering Chicago from the west, north, or south, may be considered a feeder of the Pennsylvania.

O. T. H., Atlanta, Georgia.—You should not feel discouraged over the outlook in view of the fact that telephonic train-despatching is seemingly becoming an institution. No operators lost their jobs when the change was made, although it is of course reasonable to assume that in the event of this system becoming general, persons might be employed as telephone operators who are not telegraphers.

The fact that you are an operator would not bar you from consideration should you desire to enter the telephone service. We are not advised regarding the requirements for membership in the Order of Railway Telegraphers. You may obtain the information readily, however, from any operator in your city who can put you in touch with the local secretary. We cannot advise regarding the present demand for operators.

IS it necessary for a fireman to understand fully the operation of the air-brake? I have been told that it does not appertain to a fireman's duty. Can you give me the names and addresses of any employing officials of the Oregon Short Line?

G. E. W., Grand Valley, Col.

Not necessary so far as his routine work is concerned, but any fireman ambitious to cross the cab, and we presume they all are, naturally is desirous of learning all he can about his future calling. The air-brake is quite a study, and you cannot learn it all by observation on the foot-plate. You might acquire the art of braking a train, but the

air examination which you will be called upon to pass goes into the matter much more deeply than that, and much reading and study are required to pass it.

J. F. Dunn is superintendent of motive power, Oregon Short Line, at Salt Lake City, Utah.

C. W. K., Montevideo, Minnesota.—Address Joseph W. Taylor, secretary Master Car Builders' Association, 390 Old Colony Building, Chicago, Illinois.

WILL you kindly advise through your magazine the largest amount paid to a station-matron, and to whom to apply for the position in the Eastern States?

D. M., Philmont, Pa.

The compensation varies from $6 to $18 per week, as a country station varies from the Washington Union Depot; these quotations cover the extreme range. Apply to the general manager of the railroad where you desire employment, and the application will be referred to the division superintendent for reply.

A. S., Olean, New York.—Air-brake inspectors are usually selected from among the employees of a railroad, but as your letter indicates that you are experienced, you might make application to any master mechanic of your selection. Better make it in person, as we have little faith in the possibility of securing a job by letter.

H. H., Seneca Falls, New York.—We think the pay of the position you mention is $30 per month, out of which the porter boards himself. You can secure an application blank and full particulars by addressing Mr. R. C. Wagner, district superintendent, Pullman Co., Albany, New York.

WHAT are the colors that an engineer must be able to distinguish?

(2) Can a person who wears glasses become an engineer?

(3) What would be your advice to a person of seventeen who desires to become an engineer—work around a locomotive repair-shop, or learn the machinist's trade? I have a chance to learn the trade at the Charlestown navy-yard, and am undecided.

E. B. S., Chelsea, Mass.

(1) The test is made in selecting the various colors from a basket of colored twists. There are several shades of each, but only the primary colors need be known. The test is then continued on a lantern with shutters in a darkened room from which the colors blue, white, red, and green are flashed at random and must be called.

(2) No, not likely.

(3) Enter the navy-yard. You cannot get on firing at all events until you are twenty-one, and by that time you will have learned a good trade from good employers.

W. A. S., Peoria, Illinois.—(1) From the Frank A. Munsey Company, 175 Fifth Avenue, New York, by mentioning name of article and enclosing price of magazine. It appeared in August, 1907.

(2) Address *Railway and Locomotive Engineering*, New York, N. Y., telling them what you want.

(3) To the master mechanic of railroad shop.

(4) Begin as fireman if twenty-one years old; if younger a minor roundhouse job is good for the experience.

(5) Don't look for a job on the railroad merely for the summer months. Let it alone entirely, or enter with the resolve to make it a life-work.

E. T. W., Gibbon, Nebraska.—The opinion offered by the railroad men you have consulted is correct as we view it: the order is in force over the message, and the situation must be so interpreted. We are glad to have your comment on our reply to "P. V. W." in May, 1908, magazine, but we see no reason for changing our opinion. If Extra 1715 had not arrived at Stockton, and a superior train at that, we can't see any interpretation under the standard code which would permit engine 1403 to pull out against it without a definite meet-order.

L. T. W., Buffalo, New York.—Read "The Making of an Engineer" in the August, 1907, issue of THE RAILROAD MAN'S MAGAZINE.

I HAVE a valuable method for manufacturing railroad-ties, viz., a tie which will not rot or burn, will hold spikes securely, and cost no more than ties now in use. They are not made of steel, or any other metal, or concrete, and will last one hundred years without removal. How would you advise me to dispose of this invention? How much should I ask for it?

F. W., Ticonderoga, N. Y.

Have it patented through a reliable attorney or agency, and then submit it to the chief engineer of any railroad. If it is all

you claim, you can practically name your own price.

L. W., Junction, Illinois.—We have no knowledge of any road instructing telegraphers for its service other than the Pennsylvania. Address superintendent of telegraph, Broad Street Station, Philadelphia, Pennsylvania.

H. P., Kokoma, Indiana.—We will refer you to the "Working of the Black System" in the November, 1907, number of THE RAILROAD MAN'S MAGAZINE.

W. T. C., Tupelo, Arkansas.—We have been advised that the California Northwestern Railroad is being built from both ends, from Ukiah, in Mendocino County, to Eureka, in Humboldt County. They bought out a road which was already built from Eureka, and there are now probably less than one hundred miles to build.

C. H., Gadsden, Alabama.—Address Isthmian Canal Commission, Washington, District of Columbia, and full information will be sent you relative to clerical positions on the isthmus.

F. H. M., Greenville, Pennsylvania.—The Western Pacific Railroad will run from Salt Lake City to San Francisco, and is intended to operate 924 miles. George A. Brown, Jr., Stockton, Cal., is superintendent, and application for employment in the occupations you mention should no doubt be addressed to him.

J. N. Y., New York, New York—We have been advised that no franchise has been granted for a railroad to cross the Queensboro Bridge, although there have been several applications to the Public Service Commission for the privilege. We have no information about the various companies named by you.

WHAT passenger-train in Texas makes the longest run without a stop, and which road in Texas uses the largest passenger and freight locomotives?

(2) What is the fastest passenger run ever made in the United States over five hundred miles long, the fastest run under one hundred miles, and how does the speed of the locomotive compare with that of the automobile?

(3) Which town in the United States has the most daily passenger-trains arriving and departing, not counting suburban trains, New York, Chicago, or St. Louis?

JUSTIN, Texas.

(1) They change so frequently that the surest way would be to get the folders and look it up for yourself. No doubt the "Sunset Limited" over the Southern Pacific, and also the S. P. to the other portion of your query.

(2) See article on "Railroad Speed" in July, 1908, number of THE RAILROAD MAN'S MAGAZINE. This was compiled with great care from the official records in the possession of the American Railway Master Mechanics' Association, and mentions many short and long distance runs on which records were made. There is no record of locomotive speed as low as that ascribed to an automobile for a single mile of twenty-seven seconds and a fraction.

(3) Chicago, Illinois.

A. Mack, Montreal; W. McC., Brooklyn, New York; E. G. S., Saratoga Springs, New York; "Mississippian"; A. H., Fairbury, Illinois.—The requirements for the position of railroad fireman, representing the general pratise, were set forth in article No. 1 of the Self-Help Department—"The Making of an Engineer," which appeared in THE RAILROAD MAN'S MAGAZINE for August, 1907. We have also had occasion to go over the matter again and again in this department in answer to others who evidently failed to see the issue above referred to.

From the May, 1908, number we reproduce the following statement made in this department in answer to A. E. P., Willis, Massachusetts: "The applicant should be not less than twenty-one, nor more than twenty-five years of age; with at least normal sight and hearing, and of sound health. The application should be made in person to the master mechanic of the road division on which employment is preferred. Applicants are invariably questioned as to habits, etc., but not as a rule on their future duties. If satisfactory they are turned over to the company's eye examiner (sometimes this examination is made by the road foreman of engines) for final acceptance or rejection."

Supplementing the above we would say that ability to read a card handed the applicant by the examiners is representative of the educational requirements. Experience is not a prime requisite, although it may help some when roads are short of men. There is no hard and fast rule about promotion, or even passing from the extra board to a regular engine. To illustrate the variation in

this line, dependent on the condition of business, section of country, etc., we might add that we have known a new fireman to be immediately assigned to a regular engine; then we can recall another who remained three years on the extra list, and in his turn all the time

We once knew a fireman to be promoted to an engineer in two years, and have acquaintance with another at this writing who has fired fifteen years. Their pay varies from $2 per day of one hundred miles to $2.70 An engineer's pay ranges from $3.50 to $4.25 per day. Books relating to all branches of the subject can be secured from *Railway and Locomotive Engineering*, New York, New York. Preliminary shop experience is not a requisite, but is valuable for the information which may be gained

H. E. W., Peru, Indiana.—See reply to "R. M.," this issue, in regard to the Western Pacific Railroad. A list of all master mechanics on the Southern Pacific system is too lengthy for the crowded condition of the Lantern Department this month H. J. Small, San Francisco, California, is general superintendent of motive power, and he can advise you regarding any question which might be raised with the master mechanics

O. K. M., C., M. and St. P. Ry.—The Grand Trunk Pacific is now finished from Winnipeg, Manitoba, to Edmonton, Alberta. An official of the company is quoted as saying that construction on the branch lines will be begun this year from Brandon, Manitoba, east to Regina, Saskatchewan; from Regina, northeast to Yorkton; from Biggar, Saskatchewan, north to Battleford, and from Wainwright, Alberta, south, *via* Calgary, to the international boundary

So far as regards the future of the Grand Trunk Pacific, there is no doubt of its success. There seems to be no known northerly limits to the great wheat field which largely comprises its territory. It will run a line from Melville to Hudson Bay, and another branch line will run up to the Great Slave Lake, which is almost on a parallel with the Klondike, and along this remote line some day will also be enormous fields of wheat In Winnipeg and Edmonton there are now department-stores which a generation ago were outposts of the Hudson Bay Company

Beyond the prairie section the road will cross the Rocky Mountains, and terminate at Prince Rupert, on the Pacific coast. It is planned to make this one of the great ports of the Pacific, as it saves two days' time in the journey from Yokohama Ships from China and Japan will steam in as soon as the first train makes its way across the continent

O. O. Winter, general superintendent, Winnipeg, Manitoba, is the man "on the firing line." We do not know of any publications issued by the road for distribution, but he will advise you.

We note from your letter that you have unearthed a larger roundhouse than the fifty-one-stall one of the Chicago and Western Indiana, in Chicago, which we mentioned in the January number as the largest of which we knew. You no doubt understand that there are no compiled statistics regarding such places, and in reviewing a wide experience in connection with roundhouses, we decided on the much-exploited one mentioned as the largest we had ever had to do with, seen, or read of.

Possibly you included the exits and entrances in the fifty-three-stall one at Oneonta, Delaware and Hudson Railway. Where there are no statistics, as we have said, the only way to bring out these interesting facts is as you have done, and we thank you for your letter. We would also be pleased to learn of one still larger, as it would no doubt be of interest to all classes of railroad men to have this point settled

A. S., Fresno, California Signal oil No. 1 oil generally so designated in railroad service is lard-oil thinned with kerosene to the desired consistency.

E. V. M., Vidor, Pennsylvania Better take up the matter of wages paid on the Panama Railroad with General Manager H. J. Silfer, direct. His address is Colon, Panama. The Baltimore and Ohio Railroad has no master mechanic in Philadelphia; address W. Sinnott, general foreman. J. H. Mengel is master mechanic for the Pennsylvania Railroad at West Philadelphia, Pennsylvania.

I WOULD like to have an explanation in regard to setting or "running over" the valves of Walschaert valve-gear For instance: Valve, outside admission; lap, 1 inch; lead, 3-16 inch each end, or ⅜ inch total. In forward gear the lead is 3-16 inch on front end, and 3-32 inch on back end

In back gear the lead is ⅛ inch in front end and 3-16 inch in back end. What changes would I need to make to square this side of engine up? I do not know whether

I would have to lengthen or shorten both the radius-bar and eccentric rods

P. M., Havre, Mont.

The Walschaert motion, as ordinarily constructed, does not lend itself as readily to adjustment as does the Stephenson motion with independent eccentrics, and for this reason is not as liable to get out of adjustment. It must be correctly laid out in the design and correctly fitted up. The importance of this cannot be overestimated It is therefore evident that a proper design of Walschaert gear can only be laid out by a skilled draftsman

It is apparent, in the illustration of inaccuracy which you cite, that a fundamental error exists: that proper care was not exercised to preserve all parts in their original forms and positions, and this should always be checked by verifying the valve-vents through turning the main driving-wheels before the locomotive is placed in service

We will now quote the best method of adjusting valves with Walschaert gear: through which it is possible to correct, to a certain extent, certain errors, including the conditions mentioned in your letter. If you will study these closely, meanwhile checking the locomotive which you name, we think you can correct the trouble

(1) The motion must be adjusted with the cranks on the dead centers, by lengthening or shortening the eccentric-rods, until the link takes such a position as to impart no motion to the valve when the link-block is moved from its extreme forward to its extreme backward position. Before this change in the eccentric-rod is resorted to, the length of the valve-stem should be examined, as it may be of advantage to plane off, or line under, the foot of the link support, which might correct the lengths of both rods, or at least only one of these should need to be changed

(2) The difference between the two positions of the valve on the forward or back centers is the lap and lead doubled, and cannot be changed except by changing the leverage relations of the combination lever.

(3) A given lead determines the lap, or a given lap determines the lead, and it must be divided for both ends as desired by lengthening or shortening the valve-spindle.

(4) Within certain limits the adjustment may be made by shortening or lengthening the radius-bar, but it is desirable to keep the length of this bar equal to the radius of the links, in order to meet the requirements of the first condition.

(5) The lead may be increased by reducing the lap, and the cut-off point will then be slightly advanced. Increasing the lap introduces the opposite effect on the cut-off. With good judgment these quantities may be varied to offset their irregularities inherent in transforming rotary into linear motions.

(6) Slight variations may be made in the cut off points as covered by the previous paragraph, but an independent adjustment cannot be made except by shifting the location of the suspension point, which is preferably determined by a model.

C. P. Mc., St. Paul, Minnesota.—Your request for the name of the engineer who pulls a mixed train out of Cheney, Washington, on the Northern Pacific, is a little beyond our power to answer. This and your other questions should be taken up with that company, whose headquarters are in your own city.

J. H. K., Terre Haute, Indiana.—Your question, "What code of blocking trains on the main branches of the Iron Mountain do they use: figure code or letter code?" leaves us in some doubt as to what is wanted, but we will take up the matter through the proper channels and endeavor to advise you

C. I. C., Compton, California.—In regard to the contraction and expansion of steel bridges, we will look this up thoroughly and trust to have the information in our next issue

H. J. B. Y., Arlington, New York.—Address C. N. Woodward, superintendent, New Haven, Connecticut, and your application will no doubt be referred to the proper person

G. L. B., Indianapolis, Indiana—(1) To the division superintendent.

(2) Can't say exactly: about $2.25 per day; but he will advise you.

(3) Eighteen years is too young for a freight brakeman, with or without parents' consent

C. F., Columbus, Ohio.—Telegraphy is crowded as an occupation, and wages in that line are not what they should be. Unless you have a decided inclination that way, better let it alone

P. V., Jr., Dallas, Texas.—Call on Mr. T. S. McDowell, general superintendent, M., K. and T. Ry., in your city, and he will refer you to the proper official

"PIECES OF EIGHT."

BY ASA JEROME TOWNSEND.

A Coincident Hits the Judge Square in the Face and Points the Way to Poetic Justice.

AFTER the dust had settled and we were able to see things clearly, the Judge expressed himself eloquently. "From his earliest youth he has been in active training with the long-bow; and let me tell you, Colonel, that when a man gives the most of his twoscore years and ten to such exercise, the scope and facility he acquires are nothing short of astounding. Sir, we have seen James Budlong release his prize shaft with an exultant croon of the bowstring; and we have watched that winged and glittering lie flick dazzlingly through the empyrean, and there, in the ultimate distance, pluck an apple from the very teeth of Ananias! I take off my hat to Budlong."

The Judge's sentiments were mine. Certainly Budlong's handling of the "Buccaneer" was a star performance. The Buccaneer was a quadrilateral stretch of sand with a heap of stones at each corner and a larger heap in the center.

With racy disregard of indications and probabilities, the rich Budlong fancy conceived it to be a mining-claim, and it was so located and entered at the recorder's office. There was not even a limestone stringer on the Buccaneer, no gold-bearing ground within miles of it, and Budlong's eccentric gopherings uncovered nothing but sand. Salt River Valley sat back in the shade of its adobe walls and roared.

It was the general verdict that Budlong's delectable imaginings were bearing the usual fruit: for years he had deceived others, and the habit had so grown and obsessed him that he was now deceiving himself.

Whence he came no one knew, and whither he went it was left for the Judge and me to discover. For a year he and his wife and the four little Budlongs eked out a precarious existence in the one-room mud house which the head of the family had raised on the Buccaneer. In the beginning they lived royally on canned goods; then, falling through the intermediate stages of bacon, beans, and roasted chuckwallahs, the entire family was brought as low as nigger-head cactus and mesquit pods. Budlong's horse managed to keep alive on cottonwood bark during the period of famine. As time passed, it began to look as though the Budlongs would have to fall back on the climate, or at least on the horse.

At this juncture the Judge suggested that he and I drive out to the Buccaneer with a sack of flour and five bushels of potatoes. We found Budlong toiling under the hot sun with pick and shovel.

"Howdy, Judge," said he, drooping on the long handle of his shovel; "howdy, Colonel. Put out your cabyos and stay to—" It was almost high

noon, and Budlong caught himself just in time. "Stay a while," he went on sapiently, "and we'll have a feast of reason and flow of soul. I'd like to show you over the property."

Mrs. Budlong and the four little Budlongs flocked toward us from the mud house. Their eyes were abnormally bright, and their brown faces, pitifully thin, held our sympathetic attention.

"We can't stop long, Jim," said the Judge. "Say, if you'll quit this fool digging I'll give you a job over at my orange-grove. Come, now!"

The wife peered at her husband dubiously. The four children, hanging to her skirts, looked a hungry appeal into the lean face of the optimist.

"Leave the Buccaneer," gasped Budlong—"*me?*" His eyes lighted with feeble indignation. "I'll admit, Judge, I haven't had much luck yet, but, by gorry, I'm going to strike it before I quit; and I don't quit till I do strike it."

"Some day," remarked the Judge, "you'll fall into one of those long pits you're digging, and all Mrs. Budlong will have to do will be to push in the sand. What's the use? You can dig to China on this claim and never find a trace of color. There's no vein. Why, man, the formations show that it isn't in reason."

Budlong drew down the lid of his left eye. "I ain't so big a fool as I look, Judge," said he.

"You couldn't be," returned the Judge.

"That's a hot one, eh?" smiled Budlong. "But, look here; I know there's no vein, and I'm not looking for one. I'm hunting for kettles."

The Judge stirred uneasily. Had Budlong gone daft under the spell of the Buccaneer? This talk about kettles seemed to indicate it.

"Jim!" rebuked Mrs. Budlong plaintively, beating the air with her hand; "you shouldn't have let it out."

"I'm going to tell it all out, Nance," averred Budlong. "There ain't a hassayamper but thinks I'm starving you-all just because I think this is a gold-mine. Get the paper," he added, throwing down his shovel. "Judge, you and the Colonel drive over into the shade. I'm going to tell you something that'll surprise you."

Surrounded by her offspring, Mrs. Budlong started for the hut. Her husband followed our buckboard until we drew up in the hut's shadow, and there he collapsed with his back against the wall. Mrs. Budlong reappeared with a folded paper.

"Do you reelly think you ought to do this, Jim?" she fenced weakly as she laid the paper in Budlong's hand.

"Nance," he answered, "I know my business. The time has arrived when folks have got to understand that I ain't—that I *can't* be, Judge—as big a fool as I look. I didn't locate this ground, Judge and Colonel, on account of a vein being under it. All Arizona ground is pockety, but, as I was just informed, the ground ain't right for pockets in these parts. I'm looking for ten iron kettles, each kettle full of pieces of eight that once belonged to Old Morgan, the pirate."

The Judge winked at me, but held a serious face. Budlong was stringing his bow preparatory to "stringing" us. I felt it.

"What has Morgan, the pirate, got to do with the Buccaneer, Jim?" inquired the Judge soberly.

As he put the question we both recognized a method in Budlong's madness. He had located the claim a year before as the Buccaneer; so, from the very beginning, he had hewed to the line.

"Ten kettles," reiterated Budlong, slapping wearily at a persistent fly, "and each one full of pieces of eight. Loot, gentlemen, from the old city of Panama. In them days," he expanded, "Panama was the place to which flowed the wealth of the Incas.

"Plate fleets, as they was called, dropped their cargoes of gold and silver bullion in that port, and sailed back to Peru with merchandise from Panama and the Spanish Main. Morgan knew a good thing when he saw it, and so he grabbed Panama.

"Aground in the harbor was some Spanish ships. Morgan sent men to seize 'em and bring 'em in when they floated with the tide. Among the men sent to capture the ships was a soldier of fortune named Cap'n Trench. The ship he found was trying to get away with the kettles and the pieces of eight.

"Judge and Colonel, I take off my hat to this man Trench. He was won'derfully knowin'. When the tide lifted that old caravel off the bar, 'stead of sailing into the harbor, he bore away up the coast and as far north as he could go in the Gulf of Californy. Spaniards was thick, and Trench tried to get away from 'em in the Colorado River.

"His boat was wrecked, half the men with him was drowned, but he took the kettles and the pieces of eight and got ashore about where Yuma is now. There was six men with him, and they corralled some mules and started for Santa Fe.

"Five of the six men died in the desert. Cap'n Trench and the other man, with the kettles and half the mules, reached this place—*this place*, I say," and Budlong got up and stamped the earth; "this very spot, where a well-fed Judge and Colonel set in their buckboard talking with a half-starved man who's been written down a fool."

Budlong laughed bitterly and wiped his brow on the sleeve of his coat.

"Trench died," he proceeded, sitting down again. "T'other man buried the kettles, at the same time he buried Trench; then, using the last of the mules, he finally managed to reach Santa Fe. Santa Fe was Spanish, so he had to keep quiet about the kettles. But he cashed in, and it was sudden, so sudden he hadn't any chance to dispose of a paper—this paper," and Budlong waved the folded sheet, "which was found about his clothes. So it happened that this valuable document was put with a lot of other papers in the archives of the old *palaccio*.

"Now," and Budlong pulled himself briskly together, "we come down to more modern times, Judge and Colonel—to the time, if you please, when Pike was Governor of New Mexico. He made a bonfire of some of the old papers in the *palaccio*, and the rest he sold to storekeepers for wrapping-paper. A man I knew, a good many years ago, happened to be in Sante Fe and bought some candles. The candles was wrapped up in that paper taken from the fellow who traveled with Trench.

"I got hold of it, and here it is." Once more Budlong waved the paper, and then thrust it solicitously into the breast of his blue shirt. "No, Judge and Colonel," said he, "I'm not going to read it, but I want to tell you it gives me the bearings of the Buccaneer plumb to rights. Here's the place the kettles was buried, and it's a silver-mine. I'm going to hang right on till the Buccaneer makes me rich; and if some people not a thousand miles off wanted in on the deal to the extent of a grub-stake—" Budlong finished by getting up and looking into the rear of the buckboard.

The Judge heaved a sigh. "Here's a grub-stake for you, Jim," said he. "The story's worth it, and we don't want any share in your pieces of eight."

Budlong shook hands with us, and unloaded the flour and potatoes. Then we drove thoughtfully back to town.

"What do you think of that yarn of Budlong's, Judge?" I asked.

"It's a peach. Corroborative detail is Jim's long suit. I could almost hear that fellow Munchausen turning in his grave."

"What corroborative detail do you refer to?"

"Governor Pike. He really sold and burned a lot of old papers."

One week later the Budlong family exploded a bomb in the peaceful city of Phœnix. From one end of Washington Street to the other leaped rumors and rumors of rumors. Finally they took concrete form and were discussed by excited groups in Court House Square and City Hall Plaza, in highways and byways. Chinatown, the Mexican quarter, the stores, the boarding-houses, the hotels, all rang with news of strange portent.

Even the thin-faced tourist brightened, listened wonderingly, and was tempted to ask if the town was Bagdad and where was the palace of the Caliph. It was like a tale cut bodily from "The Thousand and One Nights."

Mrs. Budlong, in the character of *Schah resade*, did most of the talking, and the story of Morgan, the pirate, of the loot from Panama, of the kettles and pieces of eight, was recited fluently and prosily. After a year's search Budlong had found one of the kettles and was now in town with his spoil.

In my office the Judge and I were sitting at a window, watching the antics of two trained bears which were being

put through their paces by a sad-eyed Mexican. The Judge leaned out and delivered himself of a two-bit piece.

"How long, Colonel," he remarked, resuming his seat and his cigar, "will a sack of flour and five bushels of potatoes furnish dynamic energy for the Budlongs?"

I was deep in the computation when a shadowy horse stumbled into view, drawing a crazy wagon. The wagon was filled with the objects of our solicitude. Afterward I thought how odd it was that the Judge should revert to the Budlongs immediately after contributing to the bears.

Budlong and Mrs. Budlong, with the smallest of the Budlongs, occupied the wagon seat. Loaded in behind were the oldest three of the young Budlongs. Carking care had no place among them. Exultation was written large in each face.

Budlong exchanged brief salutations with the sad-eyed Mexican. That much I saw, but it did not impress me. Then Budlong looked up at my window, passed the reins to his wife, mounted the wagon seat, and roared jubilantly:

"Loot from Panama!" and he held up a glittering bar. "Pieces of eight!" caroled Mrs. Budlong, balancing her youngest with one hand and shaking a jingling tobacco-pouch with the other.

The horse stumbled on. The bears, I remember, were doing a two-step.

"Great Scott!" whispered the Judge hoarsely. "For a flight of fancy, Colonel, this of Jim's appears to have achieved a tangible result."

"Wait until the returns are all in, Judge," I urged.

"I can't wait," he fluttered, grabbing his hat. "Let's be in at the finish."

"Not I," and I settled back with a fresh cigar. "The burden and heat of the day call for a siesta. If the rumps true, Judge, come back and re[illegible]"

In two hours the Judge was on hand, puffing from haste and red with excitement. Budlong had found one kettle. All but a handful of the pieces of eight he had melted down into ingots. The tarnished samples of medieval coinage were now on exhibition in a jeweler's window. The ingots had been sold to the bank for something like eight thousand dollars. If I didn't believe Budlong had made a find, I could go and look at the kettle.

The Budlongs were installed in the *de luxe* suite at the best hotel. Mrs. Budlong, whose maiden name was Mahoney, was ravaging the stores for green silk; the oldest three of the offspring were invading every baker-shop in town and cornering the visible supply of cream puffs; Budlong himself was grub-staking prospectors right and left, figuring on fliers in mining propositions, and frantically trying to get rid of his money.

Through the Judge's report I found myself caught in the whirl of events. Locking my office, I accompanied the Judge on a search for Budlong—a search inspired purely by admonitory reasons. A golden trail marked Budlong's erratic wanderings. In one store he had bought a silk hat; in another he had left his order for a dress-suit; farther along he had bought a soda-water fountain for an hour and had administered *gratis* to the thirst of all comers; across from the City Hall Plaza he had dropped five hundred in a temple of chance.

The Judge, staggering to an umbrella-tree in the plaza, flung himself down on a settee, and mopped his dripping face.

"Budlong's crazy!" he declared. "You'd think he had eight millions instead of eight thousand, Colonel. I'll lay you an oyster-supper that he and Mrs. B. and the young B.'s run through those pieces of eight before night."

"Easy come, easy go," I said

"Easy!" snorted the Judge. "Is a year's starvation easy?"

"That was no bet you offered me, Judge," I parried, "but a sure thing. Look!"

The three young Budlongs were trailing in single file down the street, barefooted, happy, besmeared and besmearing themselves from head to foot with cream puffs.

"Why, oh, why," groaned the Judge, "must frail human nature leap from famine into plenty on a wave of green silk, cream puffs, and prodigal asininity? A basic principle, Colonel, and like many another basic principle, not to be explained. I myself once came into a small bequest, and went up against a job of salt at Albuquerque."

His lower jaw tightened and chagrin burned in his eyes. I recalled the deplorable event to which he referred. He had been a stranger in Albuquerque, and they had taken him in. "Budlong's trail," the Judge finished, getting to his feet, "is too devious for a fat man on a hot day. I'm going home."

Flies gather about the molasses-barrel, and the woods are full of tinhorns on payday. Here is another basic principle, more easily explained than the one propounded by the Judge. We found it exemplified at 10 A.M. the next morning, when we waited upon Mrs. Budlong at the Plaza Hotel.

Speculators had driven her into a corner and were buzzing their bids for the Buccaneer. Up to three thousand dollars they were bidding against each other; following this they formed a pool and went as high as ten thousand dollars. Mrs. Budlong was properly scornful.

"I can figure a little myself," we heard her say. "If there was eight thousand odd in one kettle, then you're only buying one and a quarter of the nine kettles still to be dug up. Anyhow, you'll have to talk to Jim, but I know right well what he'll say."

The Judge and I raised the siege and carried Mrs. Budlong off to another corner for a few words regarding Jim.

"My," she said, smoothing out a fold of her ready-made green silk, "haven't you heard? Jim's gone off after a grubstake."

"The eight thousand all gone?" asked the Judge calmly.

"Jest about. The way Jim reckons is like this: if it took him a year to find the first kettle, it may take him another year to find the second, and o' course we got to live. The kettles seem to have been buried kind of promiscuous."

"Where has Jim gone, Mrs. Budlong?"

"Wickenburg."

"What is he going to do?"

"Well, there was a Mexican in town, and he had a couple of dancing bears to sell real cheap. Jim thought it a good buy, so he took 'em in and started north afoot; they're that savage, though. I hated to have him."

The Judge threw back his head and stared at the chandel "How are the children?" he asked presently, lowering his eyes.

"The doctor says they'll be all right to-morrow, so we can go back to the Buccaneer."

We left a few minutes later, silently and reflectively.

It was about two o'clock in the afternoon when the bears returned. Their muzzles were off, and they came alone. Fresh from the Black Cañon Trail, they created a panic the full length of Grand Avenue. Their former owner, the sad-eyed Mexican, was located by telephone and summoned in hot haste to the Five Points.

When recaptured the bears seemed peaceable and comfortably gorged, but where was Budlong?

These known facts, galloping over the town, trailed the question as a horrid and significant inference. The Judge and I, thrilled with the possibilities, hired a buckboard and drove out beyond the Arizona Canal. There, scattered over the desert, we found Budlong's hat and boots, also various other fragments of wearing apparel and signs of a sanguinary contest

"Pieces of ate," mourned the Judge as we loaded the relics into the buckboard. "Can it be that that cheerful liar will nevermore entertain us with his oral illusions? Bear meat! Colonel, it hardly seems possible."

"I wonder," said I, "if the widow will have the heart to look for the other nine kettles?"

A speculative light flickered in the Judge's eye.

Twenty-four hours saw the young Budlongs well over the effects of their cream puffs, but it was three days before Mrs. Budlong recovered from the effects of her husband's bears—and then the recovery was but partial. The sad-eyed Mexican bought back the bears for half what he had sold them for, and with part of the proceeds the widow arrayed herself in rusty black. Gathering her brood about her, and laying in a small store of provisions, Mrs. Budlong returned to the desolate mud house on the Buccaneer.

But the Budlong courage that had evolved one kettle out of a possible ten had taken flight with the head of the family. A syndicate, composed of un-

known but supposedly influential citizens purchased a quit-claim to the Buccaneer for twenty thousand dollars, and with the aid of the paper from Santa Fe began a systematic search for the remaining kettles. Mrs. Budlong and the children entrained for distant parts.

Then came disturbing news. The pieces of eight were not pieces of eight, but made-over dollars, Mex. However, the bank could congratulate itself that the bar silver was of requisite weight and fineness and worth all that had been paid for it.

Ten men and a long month's operations turned the Buccaneer upside down without unearthing so much as an iron nail, let alone an iron kettle. The syndicate threw up its hands, charged the outlay to experience account, and tried to forget Morgan the pirate, Cap'n Trench, and Budlong—particularly Budlong.

"There was only one kettle," asserted the rueful Judge, dropping into one of my chairs and lighting a post-prandial cigar.

"It was Budlong's best," I returned, "but hard on the syndicate."

"Whisper," said the Judge. "Colonel, between man and man, and under oath of inviolable secrecy, I was one of the syndicate."

"You never!" I gasped incredulously.

"I did, though," he muttered, "and with that Albuquerque deal only two years old. No fool like a man of sixty. There were twenty-five of us and we bled a thousand each. Five thousand went into pick-and-shovel work. Happy Budlong! If the bears hadn't got ahead of the syndicate—but I hesitate; and the man that hesitates is lost. Let's go downstairs."

The rest of it happened in Albuquerque. Penhallon lived there, and he was a broker in mines. It was he who had put salt on the tail of the Judge's bequest, and who, with five others whom the Judge had on his black-list, had divided the loot. Strangely enough, Penhallon invited the Judge to Albuquerque, and the Judge invited me to go with him—as a restraint, I took it, in case he showed symptoms of homicide.

Penhallon greeted us warmly. He was sorry the Judge had lost on that deal of theirs, he declared, but it was one of those unfortunate cases where indications failed to pan out, and everybody was deceived. Now Penhallon wanted to do the right thing by the Judge and had called him from Phœnix to put him next to something good.

I noted the flexing of my friend's lower jaw and the rising gleam in his eye. But there was no occasion for alarm. The Judge asked calmly for further information.

"Strangest thing you ever heard of, Judge," said Penhallon glibly. "If it's worked right, a few of us here can capture the whole bag of tricks. Sounds like a fairy tale, but I've looked into it, and I'm ready to take my oath it's straight."

"Tell us about it," urged the Judge smoothly.

Then, on my soul, if he didn't heave ahead with the story of Morgan, and Trench, and the pieces of eight, and the Santa Fe paper. There were incidental differences, however. In place of Budlong we heard of a man named Perkins, the name of this claim was the "Pirate," and not the Buccaneer, and the *locale* was shifted from the vicinity of Phœnix to the neighborhood of Albuquerque.

The Judge tipped me a wink and I fell mute and serious.

"Where did you say the Pirate is located?" he inquired gravely of Penhallon.

The broker described the place.

"I'll look it over," said the Judge.

While we were on our way to a livery barn, we passed a corner where our old friend, the sad-eyed Mexican, was exhibiting his muzzled wonders, the waltzing bears.

"Once in a while," murmured the Judge, as we passed on, "a coincidence will spring up and hit a man square in the face. It has been all of a year, Colonel, since we last set eyes on those shaggy sepulchers of the late lamented Budlong; and here Penhallon revives that fiction about the pieces of eight. We will look into this thing further."

"What is your idea, Judge?" I asked while we were driving briskly southward.

"Briefly," he answered, "it is thus: Perkins is stealing Budlong's thunder, and the result will be a severe financial

storm, during which the lightning will probably hit my friend Penhallon."

"Why interfere?" I suggested

"Well," beamed the Judge, "there are five others whom I desire this man Perkins to involve in his operations. You have heard, Colonel, of poetic justice. It is a sweet and a touching thing, but rarely met with. Let us hope that we find some inspiration for it."

There was a shanty on the Pirate, and at a distance from it a thin man was digging languidly. I saw a woman's face at the shanty window while we were driving toward the man, but the face vanished quickly. As we came close to the digger and drew rein, the Judge greeted him. Then the man straightened up, and we got a good look at him.

The Judge dropped the lines, the man dropped his shovel, and I dropped a remark:

"Budlong! Well, well, I never expected to find you here!"

"Caught!" grinned Budlong. "Did you bring an officer, Judge?"

"See here, Jim," said the Judge, rallying, "didn't those bears—"

"When I left Phœnix with the bears, Judge," broke in Budlong, "I toted a change of clothes. Reaching the right place, I scattered the old ones around, shot a buzzard, and pulled it over the sand, got into my new outfit, and crawled aboard a freight-car at Wickenburg. As for the bears—" He broke off with a laugh. "Odd, ain't it, how folks is credulous, that way?"

Chewing an unlighted cigar, the Judge surveyed Budlong with a doting eye.

"No hard feelings, Judge?"

"Not at all."

"It's quite a long trick to turn, Judge and Colonel," pursued Budlong, visibly relieved, "but it don't cost so much as you'd think. It was hard gettin' a start, as I had to begin with eight thousand dollars' worth of silver and a few doctored coins. The Mexican with the bears got the 'pieces of eight' from Sonora. When I'm ready to show up with the coins and the bar silver, he's always in town with the bears. Mrs. Budlong does the rest, and I hike out to look up another location."

"You have a versatile family, Budlong," said the Judge, "but it's hardly the right way to bring up children. I reckon you'd better quit."

"Let me get through here, first," begged Budlong; "you see, I've been a year laying my wires."

"Where have you worked this?"

"Colorado, Nevada, Arizona, and [illegible] you don't butt in."

The Judge took a note-book from his pocket and scribbled half a dozen names.

"If you can arrange to involve those men, and no more," said he, handing the paper to Budlong, "I'll not say a word, providing you retire from this particular line of endeavor immediately afterward."

"Mrs. Budlong makes the clean-up," said Budlong, "and I'll give her the list. I reckon it's all right. We've got Penhallon now."

"You think she can do it?" asked the Judge as he gathered up the lines.

"Yes."

And we heard later that she did.

DECREASED CAR AND ENGINE OUTPUT.

THE car output of the United States and Canada last year was only twenty-seven per cent of that of 1907. Of 78,271 cars built, 66,751 were freight-cars for domestic use, and 1,206 for export. For domestic use there were 1,566 passenger-cars built, while 74 were sent abroad.

Canada during the same period exported five freight-cars, and built for home use 8,593 freight and 79 passenger-cars.

As compared with 1907 these figures make very weak showing. During that year the combined output of the two countries was 284,188 freight and 5,437 passenger cars.

Locomotive building shows about the same falling off for the year. The total for the two countries, not including the engines built at the shops of railroad companies themselves, is 2,342.

Of these 2,124 were built in the United States, 1,668 for domestic use, and 456 for export. None of Canada's were exported.

The figures for the United States include 245 electric locomotives.

Full Speed Ahead.

Flinging the Track Behind and Rushing Forward to a New End of Line While the Surveyors Look Still Onward.

THE Southern Pacific has purchased two hundred acres of land at Lafayette, Louisiana. It is believed that the purpose of the company is to build extensive shops at this point

THE government of South Australia has called for bids for a large quantity of railroad material. Among them are 10,000 tons of steel rails of various sizes, and 500 tons of fish plates.

THE Seaboard Air Line is reported to be preparing plans for the expenditure of $125,000 in terminal improvements at Richmond, Virginia, and $45,000 at Manchester for the same purpose.

THE Santa Fe has ordered two Mallet compound freight locomotives with 63-inch drivers, and two Mallet compound passenger locomotives with 73-inch drivers from the Baldwin Locomotive Works

PRICES are being called for by the Pennsylvania for 2,600 cars to be used on the lines west of Pittsburgh It is stated that $3,000,000 are to be spent on rolling-stock for the road, not including motive-power

IT has been announced that the Canadian Pacific will spend $30,000,000 on construction work on its western lines this year The money has not yet been apportioned for the various improvements, but the general scheme is laid out.

A PLAN is on foot for the construction of a railroad from Ely, Nevada, to Goldfield, a distance of 207 miles across the desert. The road will be called the Ely and Goldfield. It will connect at Ely with the Nevada Northern, and at Goldfield with the Tonopah and Tidewater, and will furnish a new short cut from Salt Lake City to Goldfield and the communicating camps.

THE Canadian Northern, which has for some time been in the market for extensive freight equipment, has placed orders with Rhodes, Curry & Co. for one thousand freight-cars, and with the Canada Car Company for seven hundred and fifty. The types are not specified in the announcement

LAST January the Union Pacific received the last of its share of the order for 125 locomotives, which was placed some time ago with the American Locomotive Company for the Harriman lines. This is part of the scheme for standardizing the locomotive equipment of the various associated lines.

IT is stated that important specifications for electric railroad materials are being prepared by the New York, New Haven and Hartford, with a tentative view to the electrification of all the company's principal lines. It is expected that a good deal will be accomplished in this direction during the next two years

MATERIALS for five hundred miles of block signaling have been ordered by the Rock Island. Between Chicago and Denver electric motor semaphore signals will be installed, and the work will be done entirely by the Rock Island's own employees A contract for 700 miles of block signaling was recently let by the Frisco lines

A REPORT is current that the Burlington and the Chicago, Rock Island and Pacific are seriously considering the advisability of electrifying their lines within the city limits of Chicago, in pursuance of the plan of the railroads to abate the smoke

nuisance in that city. The Illinois Central decided upon this move some time ago.

ANNOUNCEMENT has been made that the Pennsylvania will establish creosoting plants and go in for the treatment of their ties on a very large scale. This will be the first serious attempt of an Eastern railroad in the use of the process. All the ties used on the main lines will be creosoted. The plant will have a capacity of half a million ties a year.

THE Western Pacific, having decided upon the points where they will place their stations, have commenced to let contracts for the erection of them. Forty-three stations have thus far been determined upon in the 927 miles to Salt Lake. five already have buildings along the line westward from Salt Lake City, and in California three are in process of construction.

FOR some time rumors of the electrification of large parts of the Canadian Pacific have been leaking out, and an authentic report states that experts detailed to examine the water supplies between the eastern Rockies and the Pacific Coast have reported favorably. It is said that there are enough waterfalls immediately adjacent to the main line of the Canadian Pacific to run all the railroads of the world.

FALL contracts for 1900 have been placed by the Pennsylvania. The minimum quantity to be delivered is 135,000 tons, with the privilege of increasing to 160,000 tons. The contracts were divided as follows: Illinois Steel Company and Carnegie Steel Company, 62,000 tons; Cambria Steel Company, 25,000 tons; the Pennsylvania Steel Company, 25,000 tons; Lackawanna Steel Company, 13,000 tons; and the Bethlehem Steel Company, 10,000 tons.

RECENTLY completed plans show that the Santa Fe is prepared to proceed with improvements on its property at Temple, Texas, to the extent of between $420,000 and $435,000. This will give Temple one of the best freight terminals in the South.

Some of the improvements planned are: A new passenger-station at a cost of $75,000, new freight-yards at a cost of $200,000, not including the cost of the additional land, storehouses, additional main track, and yard-offices. Besides this, the Railroad Y. M. C. A. and the Harvey House at Temple are undergoing considerable renovation and enlargement, and the Santa Fe has just completed and opened a $90,000 hospital there.

ONE of the largest locomotive plants in the country, and the first to be erected west of Pittsburgh, is about to be built by the American Locomotive Company at Gary, Indiana. Ten million dollars will be spent on the project, and 130 acres have been acquired by the company. This area is twice as large as that occupied by the present largest plant of the company. The new factory will have an output of about a thousand locomotives a year, and will give employment to twelve or fifteen thousand workers.

RECEIVERS of the Norfolk and Southern have recommended to the United States District Court in Norfolk, Virginia, the issuing of $1,000,000 in receiver's certificates, with the proceeds from the sale of which they propose to pay for the completion of a previously planned eight-mile bridge over Albemarle Sound, the construction of a general office building and terminal at Norfolk, and improvements along the line. The cost of the bridge is estimated at $580,000, and the cost of the terminal buildings at about $100,000.

THE Pennsylvania's Juniata shops have received orders to build fifteen giant locomotives of the type constructed two years ago at Pittsburgh. A rumor has it that this is the first of a series of changes to provide the whole of the main line with these heavy locomotives, as the one tried out on the fast trains in the West during the last two years has been very successful.

The total weight of the engines, with loaded tenders, will be 384,000 pounds. The tender will have a capacity of 7,000 gallons of water and 13½ tons of coal.

PRELIMINARY work on the bridge to be built across the Niagara gorge by the Trans-Niagara Bridge Company will, according to recent reports, be commenced forthwith. A site has been selected by the New York State and Canadian Commissioners, north of the upper steel arch bridge.

The new bridge will be used entirely for carrying electric service cables and for the electric railway lines. The present steel arch bridge used by the International Traction Company will be devoted entirely to the use of pedestrians and vehicles.

Riding the Rail from Coast to Coast.

BY GILSON WILLETS,

Special Traveling Correspondent of "The Railroad Man's Magazine."

ONCE before have we gathered a great bundle of yarns from the men who guard the railroad gates of the great Northwest, but apparently the supply is inexhaustible. This time we are offering you samples of the tales told by men of all the railroads centering in the "Twin Cities."

Yards, trains, offices—no possible source of narrative has been neglected and this is the result. Though we have been in St. Paul and Minneapolis together before, it would never be imagined from the freshness and originality of these yarns that the territory had even been touched.

No. 3.—TOLD IN THE TWIN CITIES BY THE KEEPERS OF THE NORTHWEST GATES.

Yarns that Fell from the Lips of the Railroaders Who Foregather in St. Paul and Minneapolis, Where All the Roads of the Great West Meet.

NIGHT in southern Minnesota; through the darkness the Great Western Limited was rushing, forty miles an hour, and at the moment was nearing a small Minnesota town scarcely a dozen miles north of the Iowa line. The train was guided over the steel way by one Paul Heeney, a Chicago Great Western engineer, out of St. Paul, who had risen to the throttle of the limited quicker than most men climb to important posts of the kind. Now, as Engineer Heeney swooped down upon that small town not far from the Hawkeye border, he gave this piercing whistle-blast:

Toot-too-oo-toot!

All readers educated in the Morse language please take notice that the above tooting and ooting of the locomotive whistle was followed by a second series, thus:

Toot! Toot!

And this in turn was succeeded by a third series:

Toot Toot!

The whole concluding with this:

Too-oo-oo-oot!

Now, then, do you know of any signal like that called for in any Book of Rules, past or present? Of course you don't. But if, perchance, you know telegraphy, as did one of the passengers on the limited that night, then you know, as the said passenger knew, that the toots and oots here given suggested the Morse equivalent for a word much used by gamins and

practical jokers on the first day of April. Anyway, the passenger before alluded to, on hearing the first series of whistle blasts, said to himself:

"That's a Morse F." And with the second blast he cried: "O!" And with third blast, "O!" And with the final series, "L."

Recognizing the word thus spelled by the engineer of the limited, the curious passenger asked himself why it was being hurled into the lonely Minnesota night. He noticed that, as the last series of blasts pierced the air, the train whizzed by a station. The passenger, peering through the Pullman window as the train passed the station, caught a glimpse of a lone station-agent at his key. But why the shrieking of that word right there? The engineer was obviously calling somebody "Fool!" Who?

Through the cloud of dust kicked up by the train, the passenger looked back at the lights of the little town where somebody had just been called "Fool!" And the passenger wondered what town it was and who might be the "Fool."

At the end of the division the passenger aforesaid left the train. He sought out that very evidently Morse-educated engineer, Paul Heeney, and found him preparing to take his iron horse to its round stable. The passenger told Heeney that he understood telegraphy per whistle-blast in lieu of per key-click, and asked him for just one little illuminating word of explanation.

Getting Square with Him.

"I was having fun with that station-agent up at that town we passed when I spelled that word," said Heeney. "I wouldn't miss the chance for anything. It's my recreation. I spell a different word every night, and the word I select always means something that isn't as complimentary as it might be. Why? Well, it's like this:

"I once worked as assistant in that station up there under that agent-operator. He and me didn't go well in double harness. I wouldn't stand without hitchin', and I wouldn't eat out of his feed-bag, so there was bad blood between us.

"He nearly killed me by making me do my own work and most of his, too. But I did the double work, all the same, and that made him all the grumpier. Finally, he put it up to the super that I weren't much good as a railroader—and by jinks! the super fired me.

"On the day I packed my duds and lit out of that town, I told that agent-operator that I would show him that I was a better railroader than he ever could be, and that I would make good my word or die in the attempt. And I did make good. I studied railroad operation as no man ever studied it before, my ambition being to make the right side of the limited in the shortest possible time. And here I am.

It Paid to Tell It.

"I forgot to tell you that while I worked at that station under that fellow, I learned the use of Morse. That's how I come to be able to proclaim my opinion of him to the whole county every night as I pass his station on a train that's too important to even hesitate. Well, sir, you've got the story."

That is the story, minus the sequel. Permit me to relate the sequel. Between that passenger and Engineer Heeney a friendship grew and grew till the two men became as brothers. Though not meeting in the flesh sometimes for a whole year, they wrote many letters each to the other—till finally the "passenger" shuffled off this mortal coil, leaving Engineer Heeney a nice, fat legacy.

That was one of the stories told me by the "keepers" of the great Northwest gateways—the railroad men of the Union stations at St. Paul and Minneapolis, the "Twin Cities." Take St. Paul first. Here is a station of many tracks for the accommodation of the trains of many great lines, such as the Northern Pacific, the Great Northern, the Chicago, Milwaukee and St. Paul, the Great Western, the Northwestern, the Soo Line, etc.

It is not the biggest station in the country, but it is one of the busiest. And because it is one of the busiest, it is not equal to the demands made upon it. So many trains arrive and depart at one time in that cramped area, that bedlam sometimes reigns. Even those in the seats of the mighty in Northwest rail-

roading have had their moments of confusion in that congested train-shed.

He'll Know Him Next Time

Late one afternoon in September, 1908, while I was "on duty" at that Union depot, William Howard Taft, Presidential candidate, and his party accompanying him on his special train, returned to the depot from the St. Paul Auditorium, where the candidate had made a speech. Mr. Taft and his friends started for their special, but nowhere could it be seen.

Presently one of the party—a short, elderly man, with an iron-gray beard—said he would make "a personally conducted search" for the train and find it forthwith or know the reason why. So he hurried away, by himself, to a gatekeeper, to whom he said in an authoritative voice:

"Where's that Taft special? I say, where can it be?"

The gatekeeper was one who had become used to an assumption of authority on the part of disgruntled passengers. So now he replied to the little, gray-bearded man:

"There's been heaps o' folks askin' for that Taft Special, and I reckon you can do your own lookin' for it, same as they had to."

"Why, see here, my man, I am Mr. Hill."

"Well, what of that? What's that special to you, anyway?"

"But I am James J. Hill, the—"

That was enough. That gatekeeper gasped, choked, looked apoplectic in the face, squirmed, turned right about, and ran madly down the platform in the most effective exhibition of train-hunting ever seen at the St. Paul Union Depot.

When the Taft Special had pulled out, some of that gatekeeper's pals came around saying: "You better get a photograph of the Old Man and study it so you'll recognize him next time."

"MERKSEN KEPT MUMBLING TO HIMSELF AND FINALLY YELLED 'THERE HE IS! HE'S HIDING RIGHT IN THIS CAR

The gatekeeper's comments are unprintable.

Those who keep that St. Paul gate to the Great Northwest are born story tellers, one "keeper" relating a harrowing experience of a fireman friend of his, thus:

One Fireman's "Bad Quarter-Hour."

"My brother—not blood, but brotherhood brother—had a thing happen on his engine in July, last year (meaning 1907) which hasn't happened to more'n half a dozen locomotive firemen in this whole country, and not one of the six wants it to happen a second time. It's a case of finding yourself in a cab of a flying train with a maniac at the throttle. Yes, sir, I mean a real, live luny man holdin' your own life and the lives of a lot of passengers in the hollow of his hand.

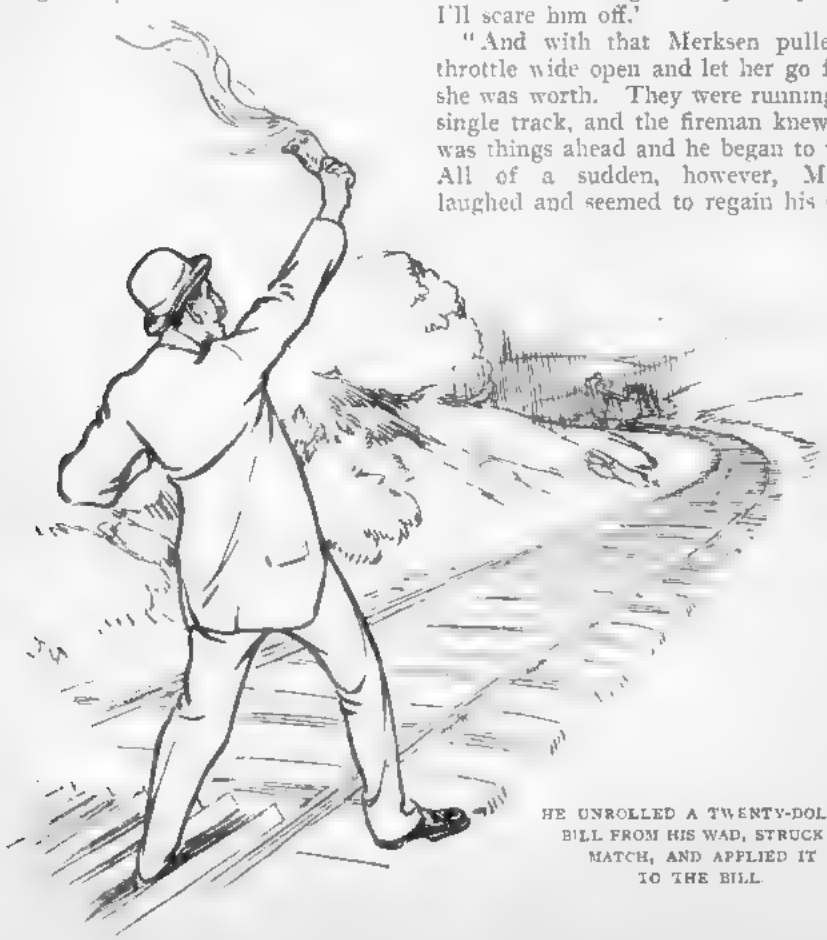
"Yeager was fireman on a Rock Island freight-train over in Iowa. His engineer was Ben Merksen. Merksen had been sick for a week or two, but on the day this thing happened he didn't guess but what he'd be O.K. to take his train over his division. As they pulled out of Valley Junction, Yeager noticed that the engineer was actin' sort of queer, but didn't pay much attention to that, thinking Merksen was merely weak from his sickness.

"After they had run a mile or so, Yeager began to sit up and take notice; for Merksen kept mumbling to himself and finally yelled: 'There he is! He's hiding right in this cab. Don't you see him? He's watching me.'

"'What's ailin' you, Ben, anyway?' observed the fireman. 'There ain't no one in this cab except just us.'

"'Yes, there is,' insisted Ben Merksen. 'And he's got an eye on you, too. I'll scare him off.'

"And with that Merksen pulled the throttle wide open and let her go for all she was worth. They were running on a single track, and the fireman knew there was things ahead and he began to worry. All of a sudden, however, Merksen laughed and seemed to regain his senses.



HE UNROLLED A TWENTY-DOLLAR BILL FROM HIS WAD, STRUCK A MATCH, AND APPLIED IT TO THE BILL.

"'Don't mind me, Yeager,' he said. 'I don't guess I'm just in good health like I was, but we'll get through all right.'

"And sure enough, he did pull up at Adair station all shipshape and proper, as per schedule. So Yeager thought he would say nothing about the matter, not wishing to do anything that would lead to the laying off of the engineer. But right after leaving Adair, Merksen again shouted:

"'Look! He's hiding under your box. Confound him! I'll show him!'

"And once again he jerked the throttle clear out and hauled the train along at a mad pace.

"'Look here, Merksen,' protested Yeager, 'you better let me run this here machine. You get over on my box and lie down and I'll run her to Atlantic.'

"But that only seemed to make Merksen all the madder. He wouldn't budge from his seat, but threw his cap from the window and settled down as if to see that train clean through to perdition in the quickest possible time

"Right ahead was a passenger train. Yeager, the fireman, knew that unless the pace was slackened there'd be things happen that wouldn't make the Rock Island happy. So he decided that right there was where he would take the law into his own hands. He was no coward, Yeager wasn't, but all the same he knew that he was no match for the superhuman strength which he felt sure that madman would use to the limit if any one attempted to interfere with him.

Close Quarters in the Cab.

"So Yeager manages to signal to a brakeman, and the brakeman comes over the tender and drops into the cab. The mad engineer was still intent on running his train direct into eternity when both fireman and brakeman jumped on him at the same time, wrenched his hand from the throttle, and threw him on the floor of the cab.

"How that maniac fought! On the part of fireman and brakeman it was a fight for life all right, for they were now close upon the passenger train that they could see was itself fleeing from this strange, unreasoning pursuer. The brakeman was really obliged to deliver that jiu-jitsu that put the quietus on the maniac engineer, or they sure would have rushed right on to a rear-ender. And while the brakeman jiu-jitsued the lunatic, the fireman reversed her and put on the air—and saved the lives of several men, women, and children.

"You bet my friend Yeager ain't easy-like and lenient never again when he gets in a cab with an engineer who's just been discharged from the hospital."

The Twenty-Dollar Leg.

One of the Chicago and Northwestern men at St. Paul told me an amusing tale of the operation of the self-preservation theory. The incident took place down the Northwestern line, at Lake City, Iowa, the star rôle being played by Mr. Stewart Dunbar, an insurance broker, of Des Moines. Mr. Dunbar estimated the value of his left leg at twenty dollars and paid the money cheerfully. This is the story:

It was a pitch dark night in March, 1908, when Nick Rouke, section foreman for the Northwestern, together with three of his men, came kiting down the track on the outskirts of Lake City, on a handcar. They had lanterns, but mighty little could they see of what was ahead of them. Presently, however, Rouke observed:

"Look, fellers. You see a candle burning ahead on the track? Or is it a match? Or what the deuce is it?"

The men said they saw a light, though what kind of a light they could not guess. Anyway, feeble though the light was, they were running up to it.

"Maybe it's a signal," said Rouke. "We better slow down."

What was that feeble light? It must be explained that the Mr. Stewart Dunbar before mentioned, had that evening arrived in Lake City, and at about nine o'clock went forth to pay a visit to friends on the edge of the town. They told him to come by way of the railroad track, as that was the most direct way for a pedestrian.

Now, as Mr Dunbar stumbled along over the ties he came to a crossing where there was one of the inevitable cattle-guards. But Mr. Dunbar knew nothing

of the cattle-guard until he found himself right upon it, with his left foot caught fast. He tugged, he twisted that foot, he swore, but all in vain. But what now terrorized him was not the fact of being stuck fast as if till doomsday, but that he heard something on wheels bearing down upon him.

Burning Money to Some Purpose.

"A hand-car," he told himself. "And a hand-car can take off a leg just as thoroughly as a limited. I must stop that hand-car or I'm a goner."

But how was he to do it? Why, by signaling, of course! How make a signal? Burn something, certainly! He searched in his pockets for paper, but he had changed his clothes in town, and had omitted to transfer to his present suit anything in the burning line.

Not a card had he, nor a letter, nor a note-book, nor anything that would burn —excepting money. To be sure, he had silver, also he had a gold piece, but he couldn't burn gold nor silver. He cursed the luck that found him now with no paper currency smaller than a twenty-dollar bill. Was a left leg worth a twenty?

He unrolled a bill of that size from his wad, struck a match, applied it to the bill, held the improvised torch above his head—and brought the hand car to a stop within a man's length of him.

"What's goin' on here?" asked section foreman Rouke, as he jumped from the hand-car.

"Did you ever hear of the man with money to burn?" asked Dunbar. "Well, I'm that man." And he explained. A minute later, Rouke showed him how to extricate his foot from the cattle-guard Also Rouke said:

"You got the handle of that torch?"

Dunbar, by way of answer, handed Rouke the unburned end of his twenty-dollar bill

A Fire-Fighting Conductor.

"You haven't spent twenty dollars, nor twenty cents," remarked Rouke. "You send this handle of your torch to the Treasury at Washington. We're witnesses for you. I don't guess you'll have any trouble gettin' a brand-new torch in exchange for this handle, mister."

Again—a Chicago, Milwaukee and St. Paul conductor said:

"There comes a time, now and then, in the affairs of conductors, when we are good for something besides just conducting. There's Charley Siebert. He's proved that a conductor can be of some good as a fire-extinguisher and impromptu salvage corps. Tell you how

"One night last March (1908)—it was a night like you read about, with streaks of lightning coming down from heaven like so many mighty javelins, and stabbing things on earth. By which I mean that it was one of the worst electric storms that Charley Siebert had ever conducted a train through

"In the midst of the electrical display, Siebert brought his train to an unscheduled stop, to give a tramp a chance to get off with his life. The stop was made near Sioux City, Iowa. While Siebert was ejecting said tramp with hand and foot, he caught sight of flames belching from a near-by grain elevator So, instead of signaling his engineer to go ahead, he ran up the track, through the rain and lightning flare, and shouted:

The Impromptu Salvage Work.

"'Bill,' or whatever his engineer's name was, 'blow your whistle for all you're worth; and hit up the bell, too.'

"The engineer, seeing the fire in the elevator and catchin' on to Siebert's scheme for alarming the town, let out a series of blasts that would have waked the dead, let alone mere sleepers. I reckon the whole town thought the Judgment Day had come, for about all the able bodied inhabitants turned out on the run. And what with the streaks of lightning and the claps of thunder, together with the conflagration at the elevator, that bunch of people, just out of bed, was almighty scared.

"But don't you believe that ended Siebert's night's work on that occasion. No, sir! As soon as he could make himself heard between thunderclaps and whistle-blasts, he yells to his engineer:

"'There's a lot of loaded grain-cars standing by the elevator. You better uncouple and get 'em out.'

"AFTER EATING ALL MY CRACKERS, HE MADE A FLYING WEDGE OF HIMSELF, RIGHT THROUGH YONDER WINDOW."

"And sure's you're born, that passenger-engine uncoupled and went to work handling grain-cars. They hauled out altogether about ten cars of wheat and saved thousands of dollars' worth of property. Conductor Siebert got a ten-point advance and thanks from headquarters."

Train despatchers at St. Paul had their yarns to spin. One told of how a Rock Island despatcher, at Des Moines, Iowa, a man named Gibbs, was April-fooled on a day that wasn't in April at all.

April Fool Out of Season.

One night Gibbs had a train-sheet in front of him that was so full of figures and all the signs of despatching that it seemed as if not another ink-mark could be made upon it. He was handling the Rock Island's crack California train, in two sections that night, to say nothing of one or two fruit trains, half a dozen cattle-trains, a couple of meat refrigerators, and a few locals, when the operator at Grinnell "cut" in with a call for the wrecking outfit.

It seems that a stock train had left the rails, ditching a bunch of cars. Forthwith the despairing Gibbs was forced to stab everything on the sheet, while he ordered out the wreckers and cleared the track for them. Then, having got the wrecking-train well under way, he turned his poor, tired brain to figuring out a way to get that snarled up bunch of meat and fruit and cattle and passenger trains out of its tangle, when in walked the division superintendent, Mr. Ditmar, and remarked:

"Get Grinnell for me. Get the operator there in a hurry, please."

Gibbs, supposing that Superintendent Ditmar was worried about the wreck at Grinnell, once more abandoned his train-sheet and gave his entire attention to getting Grinnell. After frantic efforts, covering a period of nearly a quarter of an hour, he finally got the operator at Grinnell

"Got him, eh?" cried Superintendent Ditmar, with joy in his voice. "Well, you just tell him to make that order of mine two dozen fresh a day, instead of one."

Gibbs sprang from his chair, strode to the window, gritted his teeth, choked down a few remarks that occurred to him, then returned to his train-sheet and said sweetly: "As I ain't busy to-night, Mr.

Dutnar, perhaps you'd like me to tell Grimell whether to have 'em scrambled or Spanish omeletted."

And now for the Minneapolis tales. This other "Twin City" was no less prolific in yarns than was St. Paul, though every railroad man in the "Mill City" at that time was up to his ears in the work of relieving a car congestion such as had not been known in the yards there for years, a congestion of some six thousand cars of grain.

One of the traffic men, in the midst of giving orders for the transfer of cars from road to road or from incoming tracks to mill or elevator, gave me, piecemeal, this:

"Up at Savage, Minnesota, on the Northwestern, there's a station-agent named Asaph who's got a hobby that amounts to a real ambition. He's a student of *Sherlock Holmes*, and his ambition is to catch an escaped prisoner some time.

Sherlock Holmes in the Station.

"Well, last Tuesday (September 22, 1908), Asaph was on his regular job at the station, when he hears footsteps on his platform. He pricks up his ears and says to himself: 'That sounds to me like the footsteps of a man accustomed to marching. A farmer's footsteps say "*ker-plunk, ker-plunk*'" but this step I now hear is martial. It says, "*Hep! Hep!*" Therefore it is the step of a soldier.'

"Asaph thereupon looks out of his window and sees a young fellow coming down the platform, sees him enter the station; then sees his face at the ticket-window and hears him say:

"'Hallo, comrade! What I want to know is where I can sit in a mess hereabouts and get some rations. I'm dog-goned hungry.'

"Upon hearing those words, the station-agent's eyes snapped, his jaws came together like a vise, and his countenance gleamed with a sense of imminent triumph. He opened the door of his little office, saying:

"'Come in, bunky. I think I'll be able to spike that hole in your appetite.'

"The stranger entered the little office, for all the world like a fly into the spider's web. For no sooner had he entered, than the agent closed the door, locked it and, transferred the key to his pocket. Then, turning to the stranger, who seemed more amused than alarmed, the agent said:

"'You are my prisoner. They want you down to Fort Snelling, at St. Paul. You escaped from the guard-house there last Sunday. Your name is George Johnson. You are a trooper in the United States army, and as you are an escaped prisoner, you are also a deserter. Make yourself comfortable while I phone for an escort to come up and take you back to your guard house.'

Why He Didn't Keep Him.

"'Anything to oblige, *Mr. Holmes*,' said the 'prisoner.' 'Go right ahead with your phoning—only, please, meantime, hand out the rations.'

"The agent handed the prisoner a box of crackers, which were duly attacked tooth and nail by the hungry one. At the same time, the agent called up Fort Snelling, and some hours later the 'escort' that the agent had asked for arrived. That 'escort,' consisting of two heavily armed soldiers from Fort Snelling, found station-agent Asaph lolling in his chair with the downcast face of a man who had seen opportunity come and go ungrasped.

"'Where's the prisoner?' asked one of the armed men.

"Asaph pointed sadly to a broken window. 'Locked doors do not a prison make. After eating all my crackers, he made a flying-wedge of himself, right through yonder window, and made his getaway before I could get the door unlocked. But what hurts me most is the fact that he said he was willing to be taken, but that he would make this one more escape "just for fun."'"

How Hibbs Lost His Watch.

So ended one of the stories told by one of the busy traffic men at Minneapolis. "Just for fun!" That reminds me that I have a yarn to spin here, "just for fun." One of the men in the yards at Minneapolis told me he had been reading my "Around the Union" series and

had also received a yellow circular announcing my coming to Minneapolis, headed: "Watch for Willets." Thereupon my friend handed me a toy watch, on the dial of which were inscribed these words: "A 'Watch for Willets

"If you've got a little boy or a little girl in your house I want you to give him —or her—that watch and tell him it was given to his papa by a Minnesota railroad man. That watch has a history; brief, but none the less a history. It was bought with the idea of sending it down to Charley Hibbs, at Iowa City, Iowa, a Rock Island operator down there who was held up the other night and compelled to part with his watch.

"But, on second thought, it seemed like adding insult to injury to send a toy watch to Charley, and so, when I heard you were coming over here from St. Paul, I put those words on the dial, and I hope you'll not take it amiss

"If you'll keep the watch it will serve, maybe, as a reminder for you if you ever write the story of how Charley Hibbs was held up and robbed of his own watch, which yarn I'm here to unload on you."

And my kind friend proceeded to do so:

At three o'clock on the morning of September 19, 1908, Charley Hibbs, at his Iowa City station, was seated at his table taking train orders. His back was toward the ticket-window. Suddenly he heard a muffled voice saying: "Turn round!"

Charley turned—and beheld, standing at his ticket-window, with a forty-four leveled directly at him, a man with a red bandanna tied over the lower half of his face by way of mask. "Open the door!" commanded the masked man.

What else could Charley Hibbs do but open the door? And when he did open it, there stood another man, also masked as to the lower half of his face, and also

THE MASKED MAN FORCED THE MUZZLE OF HIS REVOLVER BETWEEN CHARLEY'S TEETH AND UP AGAINST THE ROOF OF HIS MOUTH.

pointing a gun directly at the head of the operator.

"Now hand over all the money," ordered the bandit who had come in last. The operator went to his cash-drawer and took out a lot of bills and silver, eighty-five dollars in all, and handed the money to the man behind the gun.

"Is that all?" asked the masked man.

"That's all," replied Charley, lying valiantly, for there were fifty dollars more in the safe, which stood in plain sight, and wide open, too.

"Well, it ain't enough," thundered the man at the window. "Feed him the gun, partner."

Whereat the masked man inside the office walked up to Charley Hibbs and forced the muzzle of his revolver between Charley's teeth and up against the roof of his mouth.

And What Did the Robbers Say?

"Now," he said, "hand over more of the valuables, or this will be the last meal you'll ever eat."

And here comes the incident that makes this story worth the telling. It was right there, while he held a mouthful of six-shooter, that operator Charley Hibbs proved himself capable of self-sacrifice for the sake of the Rock Island Railroad. In that dramatic moment he saved the railroad the sum of fifty dollars.

Without hesitation he calmly put his hand in his pocket, pulled out his watch, and passed it over. The bandit took the watch, evidently thinking that if an operator hands over his personal property like that, instead of company property, the object thus produced must surely represent the very last thing of value on the premises.

Then he said: "Now put up your hands. And if you make one move to lower them before we back out of sight, you won't live to own another watch."

"Well," concluded my friend at Minneapolis, "Charley wrote a letter to one of the operators down the line, who passed the news along. And the longer we pondered over Charley's heroic self-sacrifice in giving up his own watch instead of the company's fifty dollars, the firmer we became in the belief that Charley should be rewarded with a new watch.

"And presently our thoughts took shape in the toy watch which I've given you, for I forgot to tell you we've decided to give Charley a new watch just like the one he gave the bandit, by which I mean that we're going to spend one whole dollar all at once."

Only Half a Hero.

I come now to the point where I should introduce a hero. Readers of this series may have noticed that each instalment contains an incident or two relating to heroics of the rail, especially in the way of life-saving. But this time I fail in this respect. For here I can introduce, not a hero, but, as a conductor out of Minneapolis put it, "only half a hero."

"If a man who saves a human life is a hero," said the conductor in question, "then I take it that a man who saves only half a life is only fifty per cent a hero. That's just the kind of hero I'm going to tell you about now.

"He's my friend, Conductor Peterson, of the Omaha road. One day in April, 1907, while he was directing the switching of an extra freight of which he was in charge, in the yards at Mankato, Minnesota, the accident happened that made Conductor Peterson famous in the North Star State as half a hero.

"One of his brakemen was named Bill Mattoke. Mattoke was on a moving car that was being shunted, holding on in the usual way, when he leaned too far out and was struck by a stationary car and knocked off. Peterson, standing near, saw him fall, saw him hurled onto the track and under the moving car—where he lay unconscious.

Those Emotional English.

"Peterson at once sprang forward to pull the brakeman out from under the moving car before the rear wheels could run over the unfortunate man, but, alack! With all Peterson's pulling at the prostrate form, he succeeded in dragging only one-half of the brakeman from under the wheels—and after all was over it was found that the brakeman's legs were so badly crushed by the wheels that a double amputation was necessary. And that's how Conductor Peterson became just half a hero—by saving fifty per cent of a fellow railroader."

As the Minneapolis conductor finished his story, another conductor who stood by and had heard the story, spoke up:

"That near-yarn of your'n reminds me of the high-up railroad man from England who was here last year studying our railroad systems. Up north here he got caught in a wreck, but wasn't hurt a little bit. His valet, however, was put out of business for fair, for the

"SMOKE, GAS, AND SMELLS HAD BECOME SO THICK THAT THE BREAKFASTERS WERE LEAVING WITHOUT FINISHING THEIR EGGS AND CHOPS.'

Englishman's secretary came running up, saying:

"'Your man, sir, has been cut in hawf.'

"'Awfully sorry,' drawled the Britisher. 'Do you mind ascertaining which hawf of him contains my trunk keys?'"

While I was making periodical visits to Minneapolis, coming over from St Paul daily, the railway mail clerks of Minnesota, to the number of one hundred and fifty, gathered in the "Mill City" to give a banquet to President James Canfield, of the National Association of Railway Mail Clerks. It was held at the West Hotel, and there some of the "letter-slingers" told me stories, one of which I repeat here. It was told me by Mr. Van Cleve, who has a run on the Great Northern, and is of an amusing experience which a conductor of the Great Northern's Oriental Limited had with a tramp.

"It was while the train was running through Minnesota a couple of years ago," said Van Cleve. "One morning, while breakfast was being served in the dining-car, the train conductor came through and found the car filled with smoke and evil odors. In fact, the smoke, gas, and smells from the kitchen had become so thick and disagreeable that the breakfasters were leaving without finishing their eggs and chops.

The Cook's Theory.

"'What's all this mean?' demanded the train conductor of the diner conductor.

"'Seems to be something the matter with the flue,' said the diner man.

"The train conductor banged into the kitchen and there unloaded his seething indignation on the colored cook.

"'Ah do believe that tramp on top of this yere cyar are blowin' his bref into this yere kitchen, yaas, sah,' the cook ventured to say. 'Yaas, sah; tramp, sah.' the ebon chef went on. 'Li'l' while ago a man done open that li'l' do' in the roof and ask me to pass him up a chop or a boiled aig, 'cause he was hungry. But Ah done tole him he must exonerate me—and then these yere smells done begin to po' into the cyar.'

"The conductor had grasped the situation before the cook could finish his explanation of affairs, and pulled the whistle-cord. The train stopped, and he ordered a train hand to go on the roof and lay hands on 'that tramp up there.'

"The train hand obeyed orders so far as going on the roof of the diner was concerned—but no tramp did he find. What he did discover, however, was that the tramp, having been refused grub, had chosen an ingenious method of getting square.

"He had turned the air-pipe, or flue, by which gas and smoke from the kitchen fire was carried off, clear around into the wind. Immediately, of course, a forty-mile cyclone began blowing down the air-pipe into the kitchen, driving smoke and evil odors into the diner.

"'Well, that's all clear now,' said the train conductor to the diner conductor, 'but will you please tell me how, by all that's miraculous, that tramp got off this train? Sambo there, in the kitchen, says we've been going forty miles an hour

EMERGING FROM THE FLOODED ROOM WERE SOME THIRTY WOMEN ALL MORE OR LESS DRENCHED

ever since that bo asked for grub through the trap-door.'

"And to this day," added mail clerk Van Cleve, "no one knows how that tramp got off the flying train—unless he committed suicide."

And the Floods Came.

After writing the foregoing, an episode or two occurred at the Union Depot in St. Paul which should be recorded here. At the beginning of this series of stories of and by the keepers of the Northwest gates, I referred to the St. Paul station as being very busy and wholly inadequate to the demands made upon it. It is, indeed, the too-small door of a great and beautiful city, a fact to which one wag has alluded thus:

A splendid house with a rickety door;
A lame old nag to a coach and four,
A noble ship with a rotten gangplank
A powerful engine with a leaking tank -
This is the burden of my text,
We need a new Union Depot next.

The bard who evolved the above lines stands solid with the railroad men at the Union Depot at St. Paul, for none cry for a new station more than do those same soldiers of the train and track. Here's one reason for their cry:

One morning, while I was "on duty" there, there came to my ears shrill, prolonged feminine cries of lamentation and indignation from the women's waiting-room. With others, I hastened to learn the cause of the rumpus, and found that women's waiting-room looking like a place given over to shower-baths.

Emerging from the flooded room were some thirty women, all more or less drenched. Gone were marcelled coiffures, gone the curl from ostrich feathers, gone the tempers of the thirty soaked ladies who were making acid remarks about "this old station!" and inquiring, "Ain't it a disgrace?" of the world in general.

Running along the ceiling of the waiting room was a two-inch water-pipe. Under it the thirty were sitting quietly when that two-inch pipe cracked open, emptying its contents upon the unsuspecting ladies, dousing dresses and soaking Merry Widows.

"Now, if only Sawyer were here," a gateman said to me, "you'd get a treat. You'd hear anathemas such as you don't hear East! Sawyer's department always ran like—well, like a gob of tallow down a red-hot stove-pipe. And right now you'd hear him make remarks about the powers-that-be for letting a station stand that's so old in service that, through sheer protest, it has an internal hemorrhage, and—"

But just then more trouble loomed up in the person of a son of Erin from the train-shed, who bawled:

"Sure, Jerry Wright, the switchman, have fell from a car yander in the shed Didn't I see him lose his grip on the hand-rail and tumble? Didn't I see him kilt? An' whin I picked him up, shure, weren't he dead? And haven't the byes telephoned for the perlice ambulance?"

Pandemonium reigned at the main entrance where an ambulance dashed up and disgorged a police surgeon, who rushed through the station, followed by a crowd led by the son of Erin who had seen Jerry Wright "kilt." There was the very spot where Jerry Wright had fallen. And there was the crimson evidence of the flowing of his life-blood. But where was Jerry himself?

Wrong About Wright.

Jerry had vanished, and those who had telephoned for the police ambulance now tried to beat a sheepish retreat. Could the dead arise and walk? Evidently, this was the question the son of Erin put to himself, for this was his remark:

"Shure, this is the resurrection day in the marnin', and—"

Right then some buglers belonging to a band (that was on hand to greet the "Red Special" bearing Eugene Debs, Socialist candidate for President) struck up a loud tooting. Whereupon the son of Erin added: "And Gabriel do be blowin' his thrumpet."

What had happened to Jerry Wright, switchman, was this: In the first place he was not seriously "hurted." In the second place, he "came to." In the third place, he had a horror of hospitals, and, in the fourth place, when he heard that his friends of the switches had phoned for an ambulance, Jerry rose, sprang to

the top of a freight-car and, with a "high ball" to the transfer engineer, rode gaily down into the yards.

"Now if only Sawyer was here," again said my friend, the gateman. "He would have fairly blistered his lips with epithets relatin' to—"

Sawyer—Agent and Fisherman.

"Who's this Sawyer you speak of?" I put in.

Stationmaster Farrell answered:

"Sawyer? He was the salt of the earth. He was the chief ticket-agent in this station for more years than I've worked here, and I've been on the job for twenty-five years. There's his desk," pointing through the ticket-window. "Sawyer will not come to open it this morning, nor to-morrow morning, nor ever again. For Sawyer has gone away from here forever.

"Yes, this was the month I used to go fishing with him. But I stayed home this year—simply could not go without Sawyer. We all loved him. And how he loved fishin'!"

It seems that one of the favorite stories of the chief ticket-agent who had passed away had to do with a trained fish—a big bass—which he took home with him and kept as a household pet. That fish was so well trained that it would follow Sawyer all around the house, up and down stairs, and even flop along behind him whenever his master took a stroll in the suburbs of St. Paul.

But one day, alas! the trained fish was accompanying Sawyer, as usual, in his evening walk along a lonely road, when they crossed a bridge over a stream. And, terrible death! the bass slipped from the bridge, fell into the waters below, and, before Sawyer could leap to the rescue, was drowned

Doubters and cynics who claim to have seen this story before in a different setting are respectfully requested to visit St. Paul, where they will be shown the bridge.

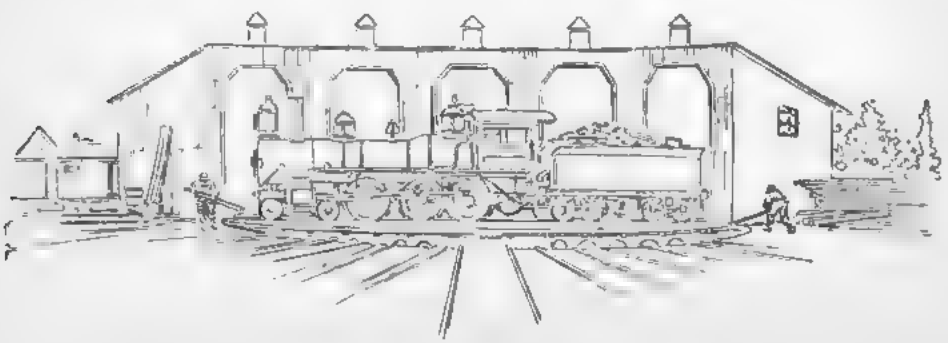
Now there was a Soo Line gatekeeper at the Union Station who knew of Sawyer's love of fishing and fish stories, and this Soo liner himself had a great fondness for delving into the lore of the finny world. He came to me and said:

"There's one of us (a Soo Line man) that's a literary artist—an author. Now, if I was to give you a copy of one of his little pieces, do you guess you could get it into your magazine? Thank you very much. It's a piece that describes a day in the life of a certain fisherman in no way connected with this depot, but all the same the boys here would rejoice to see it in print."

And the Soo railroader handed me this

> The Fisherman—he riseth up early in the morning and disturbeth the whole household. Mighty are his preparations.
>
> He goeth forth full of hope
>
> And when the day is far spent he returneth, smelling of strong drink.
>
> And the truth is not in him.

From St. Paul and Minneapolis Mr. Willets held a straight course westward over the Northern Pacific. Next month he will recount some of the yarns told him by the "boys" of that road.



A VOLUNTEER AVENGER.

BY BANNISTER MERWIN,

Author of "The Girl and the Bill," "A Knight of To-Day," Etc.

In Which a Fair Captive Gains a Glimpse of the Mind and Heart of Her Captor.

SYNOPSIS OF PREVIOUS CHAPTERS.

EDWIN DAYTON is manipulating the stock market, and the drop in Bee Line stocks is ruining many houses. He receives a note signed "Unknown," telling him to make restitution and give three million dollars to charity. As a proof of "Unknown's" power, Dayton's private car in the Pennsylvania's Jersey City yards, is that night mysteriously lifted from its rails, as if by unseen hands, and placed across six tracks, next morning being replaced in the same strange manner. On the car is scratched "Unknown." Some of the rails of the Bee Line are torn up, and on the red lamps left to warn trains is the same signature. Dayton ignores a further letter, and that evening his daughter is lifted from her runabout as if into the clouds and spirited away. She finds herself in a strange house with a mysterious man.

In the meantime Arthur Rhoades takes a hand in the search, in the course of which he is requested to leave the grounds of Mr. John Langfield by the owner, an artist and a recluse. Dayton defies the Unknown, and, believing the owners of Bee Line to be at the bottom of it, causes a run on that stock, and consequently on the whole market, producing a terrible panic. Martin, the detective, suspects Langfield and determines to raid the house, even without a warrant. All he finds is that Norah Kernan, the housekeeper, is his divorced wife, to whom he owes considerable alimony. Miss Dayton meantime has a weird adventure with a copper bowl.

CHAPTER VIII.

Realms of the Air.

THE evening was long for Mary. She made a tour of the room for the hundredth time; looked over the clothing in the closet and wondered at the selection—laughed at it a little sometimes, though she could not deny the general good taste of his choice; tried to work her fingers through the lattices that barred the windows; examined the cracked ceiling at the point where the bowl had pressed it, and wondered whether any of the plaster would fall.

She had kept Norah with her as long as she could, by dawdling over her dinner and making elaborate conversation about nothing at all. And the two hours of solitude, from seven till nine, seemed like ten hours.

Then, just as she was determining that she must induce Norah to bring her books or magazines to read, she heard a quick step in the passage. The door was unlocked and opened without the usual knock, and her captor came in.

A flutter of fear tightened her clutch on the arms of her chair. Why had he come at this hour? He was plainly nervous, for he gestured rapidly even before he began to speak.

"You need exercise, Miss Dayton," he said hurriedly. "Here"—he flung open the closet door and took out her hat and motoring cloak—"don't stop to put them on. Come with me."

She had risen. "Where are you going to take me?" she asked slowly.

"Never mind now!" he exclaimed. "You won't be sorry."

Began in the March Railroad Man's Magazine. Single copies, 10 cents.

She studied him anxiously. In this agitated mood he was new to her, and she feared him.

He stepped forward impatiently. "Be quick!" he exclaimed. "There is not much time."

"Not much time for what?" she parleyed.

"I won't explain."

He held out her hat, and to gain a few moments she put it on deliberately. Her coat was still over his arm.

"Are you going to take me home?" she demanded suddenly, as a great hope flashed upon her. His haste and nervousness might be explained on the theory that he had decided to keep her no longer. But he answered explosively, "No!"

"Then," she said, moving back toward her chair and raising her hands to remove her hat, "I shall not budge."

In an instant he had taken her in his arms and lifted her from the ground. As she was borne swiftly from the room she struggled silently to free herself, but he was strong, and all her efforts did not delay his progress. Then she was conscious that he was mounting a ladder.

"Hold on to me," he whispered; and instinctively she threw an arm around his neck.

They emerged on the roof, and he set her down on her feet. "This way," he said, leading her by the arm.

In a moment she saw on the roof before them a large dark object. It was higher than her knees, and some distance across, and it swept away in a curve on either side of her.

The man leaped to the edge. "Get in!" he ordered.

She held back, and he stepped down and lifted her by the elbows up to the dark surface and then down into a shallow depression, where she found herself upon a cushioned seat.

"Why," she gasped, "it's like a boat!"

"It is a boat." His voice had lost its sharpness.

"On the roof?"

"On the roof," he replied. He was bending over the cockpit. "I am starting the gyroscope," he said. "Now, for your own safety, I want you to lie flat on the cushions for a few minutes."

Too dazed to comprehend, she followed his instructions and, lying on her side, watched him at work. He groped forward, away from her, a few steps, and pressed the button of an electric hand-lamp. The tiny ray illumined a dial and a lever, set on a perpendicular board. He pulled the lever. The black indicator on the dial moved.

What was this sudden breeze that came down from the sky and fanned her cheek? Why did a strange pressure in her ears make her strive constantly for deep breaths of the cool air? And whence came this sudden fog that descended upon her, only to disappear as it had come, leaving the night, which had been cloudy, now clear? The sky was alight with stars. It had grown colder.

The man pushed the lever back, then forward a little, meantime consulting some other instrument. At least he appeared to be satisfied and, abandoning his position, came back to her and took her by the arm.

"Now," he said, "you may sit up and look around. But don't be frightened. You are quite safe."

His voice had a queer, flat sound. Gently he raised her, tightening his grip on her arm. As she looked about, she gave a startled cry. All around the boat was an illimitable expanse of emptiness. Into the far deeps of the night her sight traveled, searching vainly for distant horizons. Only the stars twinkled at her.

"Stand up," said the man quietly. "I will keep hold of your arm."

Wondering, she got slowly to her feet. Over the edge of the boat she looked down upon a gray, disturbed sea, apparently far below them.

"Clouds," he said. "We passed through them."

Even now she failed to understand, but she was filled with the awe of the tremendous, hushed mystery of space.

"We are three thousand feet above the earth," he said.

Then the reality of the situation came home to her, and she knew that she was not dreaming. "But how?—how?" she queried. "I can't believe it. How could it be? And this heavy boat'"

"Do you remember the copper bowl?" He spoke with careful distinctness, like a teacher trying to impress a simple fact upon a child. "We have been raised up by the same power—harnessed. Into the

frame of this boat have been built six bars of copper, and fixed above each bar is one of the little black stones. They would lift a boat of ten times the weight."

"But what *is* that power?" she asked, bewildered.

"Some other time I may tell you," he replied. "For the present remember that, thanks to the difference in the density of the earth's atmosphere, I can hold this boat at any given altitude, within a range of three feet.

"Now, if you will sit exactly where you are, I will put on an air-propeller and we will use the gasoline motor to give us horizontal motion. First, get into your cloak."

He held it for her. Then, as she seated herself, he produced from a cubby a steamer-rug, which he laid across her knees. "You will want this, too," he said.

"But you—won't you be cold?" This solicitude seemed to her natural, yet trivial, up there in the immense reaches of the sky.

"I don't mind cold," he said shortly.

From another cubby he took the propeller, a light construction of aluminum.

"You will understand now," he remarked, "why my motor-boat is so broad-beamed that people are surprised when they see it on the bay."

"Then it travels on water, too?"

"Why not?"

He stepped to the seat beside her and crawled back to the stern. She turned and watched him as he laid himself flat on the aft decking and, with his head and arms over the stern, fixed the propeller to the end of the shaft. How sure he was! How sparing of unnecessary motions!

Then, looking forward again, she settled back in the seat and wrapped the rug more closely around her. She could hear him at his work behind her, but aside from that slight sound she might have been alone among the stars. They looked cold, those sparkling points, but not unfriendly.

But while she gazed wonderingly out, an awful terror slowly stole over her. The shuddering distance of the solid earth below! The crushing weight of the firmament! The loneliness!

She got to her feet. The rug dropped away from her knees. To leap out—that was the impulse fascinating her with its very dread. To get away from this horrible, unbelievable—

An arm seized her and dragged her back as she was creeping toward the edge. She heard the man's voice in her ear, and she looked at him blankly. Vaguely she wondered whether she had lost her mind, for his words meant nothing—were only empty sound.

He forced her to the seat. Still she gazed at him with vacant eyes.

Suddenly he raised a hand and struck her lightly on the cheek with his open palm.

The spell was broken. "How dare you!" she cried. "To strike a woman! You beast, how dare you!"

She stood erect, her eyes blazing. He seized her wrists and forced her back.

"Be quiet!" he commanded. "I had to do it. Can't you see? You might have gone mad."

Limply she leaned back against the cushion, and tears welled from her eyes—faster and faster, until she was sobbing. He still held her wrists, but his voice softened as he whispered:

"Girl, do you think I wanted to strike you? I am sorry—that I had to. I was sorry before I did it. I shall always be sorry."

She nodded weakly, checking her sobs. "It's all right," she gasped. "You were right. You had to. But—but no one ever struck me before."

He waited patiently until she was quiet. Then speaking coolly, as if nothing unusual had happened, he said: "Now, we will take a little journey at a lower level."

He stooped and threw over the wheel of the motor. "*Chug—chug!*" Again! "*Chug-chug-ch-ch-ch-ch!*" and the fan-like blades at the stern began to whir. The boat was moving forward.

"Come up here," he said, indicating a seat near the wheel, which he had seized as soon as he started the motor. He seemed to have forgotten her former weakness, for he did not even offer to help her as she crept forward. He handed her a pair of goggles.

"Better put these on," he counseled, "or your eyes will suffer." At the same time he also donned a pair.

"What keeps us so steady?" she asked quite calmly.

"The gyroscope. It's under the decking, here. We don't absolutely need it, but it insures us against the least tipping."

He swung the boat around in a rushing semicircle. Far away she could see where the cloud-ocean was bright with a red glow—softly incandescent.

"What is that light?" she asked.

"You will see. I will take you there." He turned the bow toward the distant glow.

The boat sped along. The smooth motion, the rush of the wind against her face, exhilarated Mary. She was past being astonished; anything might happen, and under the stimulation of the new she forgot that the old had been turned topsy-turvy. That she was gliding through space began to seem quite natural.

Beneath them the cloud banks tumbled past. On a sudden thought the man pulled the lever and the boat dropped until it skimmed close to the surface of that gray sea, plunging now and then through the spectral mist-waves and emerging swiftly again into the steely, blue-black night.

The distant glow spread wider as they approached it, but more than an hour passed before Mary discovered that it lay beneath them. It was as though the boat moved lightly over a phosphorescent ocean.

The man shut off most of the power. Their speed was checked, and they floated lazily along. Faint noises came to them. "Now, we will go down a ways," he said, and at his touch the boat sank into the clouds.

When they emerged on the lower side, Mary was at first dazed by the glare and the low roar of sound. Two thousand feet below were the myriad lights of a great city and the confused masses of buildings. The roar was the traffic of the streets.

"New York!" gasped Mary.

"Yes," he said, "that is New York. I would go lower, but we might be seen."

Close under the cloudy roof, the boat skimmed along over the wakeful city. Mary amused herself by picking out familiar buildings and the areas of the parks. She wondered what the people in the streets would think, if they could distinguish this object in the sky. The man remained silent.

"Well," he said at last, "we must go."

The boat shot up through the clouds, and soon they were again riding the sea of mist and the reflected glow of the city was behind them.

Half an hour passed before they descended again. This time, when they came down through the clouds, everything was black beneath them. Lower they dropped—lower—lower.

What was that troubled mass beneath, creating a sense of blackness disturbed? The man spoke

"The Atlantic!"

And now they almost rested on the waves. Once, indeed, flying spray struck freshly on Mary's cheek. The man turned the wheel and, as the boat swung around, they could see a light some distance away.

"Fire Island," he explained, sending the boat high into the air. They moved in the direction of the light, and soon Mary judged that Long Island again lay beneath them, for there were numerous bright dots in view. Suddenly the man shut off the motor. "Listen!" he said.

From the distant void came faint cries—"*Honk! honk! honk!*"

"That can't be a motor-car!" exclaimed Mary.

"Wild geese," he replied, "flying south. We'll go after them. Get down into the pit, or one may strike you."

Swiftly he sent the boat to varying elevations. The cries sounded nearer, then grew fainter again.

"They've passed to our starboard," he said, looking down at Mary to see that she was well sheltered by the decking. Then he started the motor and swung the boat around in pursuit, his eyes straining into the night.

Raucous cries were heard again, and the sound of flapping wings. The man thrust his hand upward and pulled down a struggling bird. He had caught it by the feet.

"A big gander," he said, holding it so that she could see it. "Good hunting, this."

"Are you—are you going to kill it?" she asked.

"Norah will take care of it."

"Please—" she began, "I I don't believe I could ever eat any of it"

"Why not?"

"Because it was a—a live, free thing—and now—"

"And now it is a prisoner." He completed the sentence. "Very well." He tossed the bird into the air, and it flew away screaming to join its fellows.

She thought that she heard him laugh.

"You have no reason to wonder at my feeling," she said with spirit.

"I do not wonder," he replied. "I am laughing at myself."

She did not search further for his meaning, but with a sense of rebuff sank back on the seat and fixed her eyes on the clouds above. Time went by, and at last she discovered that they were sinking. Still she did not look, and the boat finally settled to its resting-place on the roof so gently that she hardly knew that the journey was over.

"Come," he said, offering his hand to help her across the deck. But she stepped the distance without his help.

"I will carry you down the ladder."

He moved toward her, and in her haste to avoid his help she began the descent so rapidly that her hands, numb from the long exposure, lost their grip. Half sliding, half falling, she dropped to the floor below. The distance was not great, yet she sank into a heap with a sharp exclamation.

He came down the ladder swiftly and knelt beside her. The rays of the lamp which shone into the closet through the open door of the adjoining room showed her face twisted with pain.

His manner was anxious; his words were terse. "Where are you hurt?" he asked.

"My ankle. It turned."

As he touched the ankle with gentle fingers, she cried out with pain. He wasted no words, but lifted her in his arms and carried her into the workroom and through the passage to her prison. She felt weak and giddy and welcomed the grateful softness of the couch when he laid her on it.

"I will try not to hurt you," he said quietly, "but I must get your shoe off." She nodded, trying to smile.

"You're a brick!" he exclaimed warmly.

This time she did smile. Fortunately the ankle was not badly swollen, and the shoe came off quite easily.

"Now you must lie quiet," he said, "until I can send Norah. She will know what to do for you. If you are injured, I shall never forgive myself." The bitterness in his voice filled her with wonder

"Thank you," she said. "I don't imagine that it's serious. You are very kind."

"I?" It was a self accusing query.

He hurried away and found Mrs. Kernan. Her mouth was open to make voluble explanation of what had happened in his absence, but he stopped her.

"Miss Dayton has sprained her ankle," he said. "Go to her at once. You know what to do in such cases."

With a "Bless my soul!" the good natured woman hurried to the stairs. The man threw himself into a chair in the darkened hall, and for a long time sat in silence, his chin on his hands.

CHAPTER IX.

Braithwaite's Message.

LASHER was nervous. Lasher was white about the mouth. He had come to a crisis of a kind that men of his type chiefly desire to avoid—a crisis that involved the possible sacrifice of his own opportunities. For the tone of the Street on the preceding day and the talk of the hotel lobbies in the evening had convinced him that at last Edwin Dayton had gone too far in his ruthless domination of the market.

None knew better than Lasher that, strong though Dayton was, he, or any man, could remain strong only as long as a dozen other giants of the exchange did not unite against him. "General feeling" is hard to define.

Men say one thing publicly and another in private, the difference depending largely on the difference between their open convictions and their secret interests. But now and then comes a time when "general feeling" leads to concerted action—and that was the danger that faced Edwin Dayton.

There had been a secret evening conference at the home of a great financier,

Lasher knew of it—knew who were there—and it required no second sight to tell him what the meeting was for. It was part of his business to know such things.

Now, if the concert of the powers of the Street decided to coerce Edwin Dayton, the result would not spell success for Lasher—unless he, foreseeing what was coming, took a position of partial independence. His own future demanded that he step from under. No one would take him up if it was believed that he had supported his master's policy to the end. But if he could show that he had advised that master to follow a better line of action?

The trouble was that Lasher had no absolutely sure knowledge that definite measures were to be taken against Edwin Dayton. He must shape his own policy by a probability. Hence his nervousness. He had, however, decided what to do what he had to do.

Dayton, seated in his office, was surprised by the expression on his lieutenant's face. His own frame of mind was not satisfying, and his manner was grim enough as he turned his stare on Lasher.

"I didn't hear you knock," he said. "You know my rules."

"Pardon me, Mr. Dayton." Lasher covered his nervousness by clearing his throat. "I think I did knock."

"Well?"

"It's about this Bee Line business, Mr. Dayton. There's a feeling in the Street."

"Quite to be expected," said Dayton.

"It is really serious this time. I should be failing in my duty as your floor representative, Mr. Dayton, if I did not urge you to ease up on the market. Candidly, I believe that you have gone as far as is safe." He had not believed that it would be so easy to say it.

Dayton's cold stare turned to a sardonic smile. "Did I ask for your advice?"

"No, sir."

"Have I generally found it necessary to rely on your advice?"

"Only in matters about which you were uninformed."

"Such as what?"

"Well—market details."

"Don't you think you had better confine your advice to market details?"

"Ordinarily, yes, Mr. Dayton. But in this case your grief—your very natural indignation—may have led you to—"

"That will do, Lasher. You have gone far enough. Now, tell me how we stand in Bee Line."

But a knock called Lasher to the door, and he returned in a moment to say that Mr. Braithwaite was outside and very anxious to see Mr. Dayton at once.

"Deliver us from our friends," muttered Dayton, to whom the tradition of a great name was merely a sound. "Well, bring him in."

Braithwaite was serious, troubled even, and he plunged into his business with an abruptness that was unlike him. "I have come on an errand I don't enjoy," he began. "It is to suggest that you let up on Bee Line."

Lasher, who was just passing out at the door, rejoiced inwardly to hear.

"I won't deny," continued Braithwaite, "that I was sent to see you. There was a meeting last night—on Madison Avenue."

"Yes?" Dayton's voice was cold, uninterested.

"You can guess who were there. I was not, of course; but they requested me to come and reason with you."

Dayton stiffened in his chair. "If they are wise, they will let me alone," he said. He knew that his words were empty, but he was fighting for time.

"Not in this case, Dayton. You know well enough who they are. You know what they stand for. They represent the planetary system of the Street, where everything runs in orbits. Hitherto they have let you alone. They do not pay much attention to comets unless—"

"Unless what?"

"Unless the comets become dangerous and threaten to force the planets out of their prescribed orbits."

"Drop these roundabout figures of speech," exclaimed Dayton angrily. "What are they going to do about it?"

Braithwaite moved uneasily. "They didn't tell me their plans, Dayton. But you don't need to be told what they might do. They can tie you up with the banks. They can fix the market so that you won't find one share of Bee Line for sale under the price which they set. They can make trouble for your other hold-

ings. They can do all this and more—if they decide that it should be done."

"What do they want?" Dayton asked, after a frowning pause.

"They want you to stop playing with the fireworks. You may shoot off a rocket once in a while, but leave the set pieces alone."

"More figures of speech!" muttered Dayton.

"Oh, well," said Braithwaite, "you understand me. All they asked me to do was to make you see the situation. I didn't exactly hunger for the job. You've been decent to me, Dayton. But we all know that there's a brick wall across one end of the Street, and that it isn't wise to try to walk through it."

"Do they insist that I get out of Bee Line altogether?"

"No," said Braithwaite dubiously, "but they are sick of these twenty-point jumps. They call it disturbing the market. One of them told me that they were disposed to be lenient because of your grief over Miss Dayton's disappearance. Is there anything new? I know no more than is in the morning papers."

"Nothing positive about her yet. But the head detective struck a possible clue last night. I refuse to believe that she has been harmed. After Martin's report last night, I believe he is on the right track."

"I sincerely hope so."

"As for this ultimatum to me," continued Dayton bruskly, "I wish you would go back to them and tell them about those letters I showed you—you know—the ones signed 'Unknown.' Tell them what my theory was. Two of the morning papers have guessed at it pretty cleverly. I admit now that I was wrong, but I don't want them to think that I would have done what I did yesterday unless I had believed what you know I did believe."

Braithwaite nodded.

"Hang it!" Dayton went on. "If I had continued to think I was right, I would have bought a heap of Bee Line to-day. As it is, I will buy some—since our friends"—he sneered—"do not object to a small operation."

Braithwaite did not confess that he had already given to the powers of the Street a hint as to the true explanation of Dayton's action. In truth, he had tried to save the comet from utter destruction, and he had succeeded; but he felt shamefaced about it, for the reason that he did not approve of Dayton, did not really like him, and had felt constrained to act as he had only by motives the absence of which would have stamped him as an ungrateful cad.

But now he found himself wondering whether Dayton was such a bad fellow, after all. There is a business rudeness which is quite distinct from social derelictions. It shows itself in a failure to observe the traditional customs of business, and it is usually due to a kind of ignorance. In the end it brings its own punishment.

Thus Dayton, after years of successful money-getting, suffered because he had violated the code of the Street when he was not powerful enough to change that code. He had been rude—in the sense of the Street. In other words, he had made himself a disturbing factor.

Business had brought out the worst in him, instead of the best, and he had overestimated his own strength; but Braithwaite had begun to see that under the cold, superficial business character was hidden a cultivated gentleman who was very much neglected by himself.

And while Braithwaite thus mused, Dayton's face was changing. For the first time since his heart-broken cries when he discovered that his daughter had been taken, he was softening under the stress of deep emotion.

"Braithwaite, it has been very hard for me," he suddenly exclaimed. "You have no daughter, and you can't know. And you can't know how tired it has made me of all this." His weary gesture included the office. "What is the use of getting—getting—getting? I am tired."

CHAPTER X.

A Hazard of Flight.

THE broad beach back of the Rhoades estate was a busy place that day. Since early morning Arthur Rhoades and his friend, Laurent Gascoigne, had been hard at work, with the help of a clever mechanic from the village, putting together the Frenchman's aeroplane, and

now at last the graceful flier, poised on its light wheels, looked fit and ready for a daring conquest of the sky.

Gascoigne — dark, wiry, intense, a Provençal—was going over the machine for the third time, testing every joint, studying with a glass every inch of the steel tubing, tightening a screw here, taking up the slack of a wire there. In his careful English he explained again the reason for his care.

"Flying," he said, "is moderately safe if you have a practicable machine which you understand thoroughly. But it is safer if you never attempt a flight until you have examined the machine minutely. A slight fracture in one of these tubes might bring disaster; therefore I make certain that the suspected fracture does not exist."

"I'm glad we have such a good place for your work," said Arthur; "even to that old hay-barn in the field back there, with one side open. It might have been made to store the Venture."

"And the beach is so good!" exclaimed Gascoigne. "See!" He pressed the ball of his foot on the sand. "It is firm. Just that rail, packed into the sand—that will serve well, with no ties to keep it in place—only those stakes, here one, there one." He busied himself with the propeller-blades, made of light, tough wood.

Arthur stood with his eyes fixed on the Venture. The groups of tetrahedral cells were fixed some feet above the broad planes of the lower structure. The rudder looked as though a breeze would break it. The motor seemed to be a fragile skeleton. But he knew that every element in that wonderful construction had been selected with a careful eye for strength.

He knew, too, that the use of the tetrahedral system made it possible to leave the ground at a comparatively low speed—say, fifteen to twenty miles an hour—which was easily to be gained by the help of a motor-car. And the small, round box below the motor—he knew that it held the little gyroscope.

A wonderful flier, this of Laurent Gascoigne's. No public attempt had yet been made to break records with it, but its stanchness had been proved, as well as its ability to maneuver daringly.

The arrival of Gascoigne had helped Arthur to endure better the terrible uncertainty about Molly Dayton. There had been nothing for him to do. Though he had wandered aimlessly about the country, hoping to find an overlooked clue, every fruitless effort that he made but increased his feeling of helplessness.

He had no claim to recognition as one of those who suffered most through her disappearance. There was no part for him in the work of the detectives. There was not even any one to talk to understandingly, since Mr. Dayton did not welcome discussion.

But the coming of Gascoigne had brought occupation. For the day he had come out of his depression.

"*Voilà!*" exclaimed Gascoigne. "I am ready."

He shifted the engine so that it connected with the gyroscope, and threw on the power. After a minute or two he disconnected again. The engine was silent, but the giant top in its circular case was revolving at high speed—unseen, unheard.

"Now!" exclaimed Gascoigne, and he removed the props. The Venture stood poised on its single track, like a bird with extended wings. Arthur uttered a cry of delight. It was so beautiful, this ship of the air, and it represented so much marvelous practise and experience, and brought man so near the last great triumph of motion.

"The gyroscope," explained Gascoigne, "will run for ten—twelve hours. No waste of power. See! I connect the engine with the propeller."

At the aeronaut's direction Arthur entered his automobile, which was attached to the aeroplane by a hundred feet of thin wire cable. "Keep a straight direction, in line with the rail—that house over there will serve you as a sight."

"Langfield's—across the inlet?"

"Ah, is that M. Langfield's house? Yes, that is the one I mean. Start when I give the word, and get up speed rapidly."

Gascoigne entered the seat in front of the motor. The Venture did not tip with his weight.

"You are past all nervousness, I suppose," said Arthur.

"There is never what you call nervous-

ness," replied Gascoigne, "but always a feeling of great excitement, of elation. I don't like to wait to start."

He threw on his power. The propeller-blades began to revolve. "Now!" he called, and Arthur sent the motor car forward. About two hundred feet the car traveled, and then Arthur was conscious of a sudden access of speed. A moment later something whirred about his head. He glanced around. The cable was dragging slack through the sand. The aeroplane had risen and soared ahead.

Arthur stopped the car. His eyes were fixed on the Venture, which was skimming rapidly away at an elevation of about twenty-five feet. Gracefully it flew, growing smaller as the distance increased.

Then, as Arthur watched, he saw one of the groups of tetrahedral cells suddenly change position. The Venture swept around in a wide curve, out over the waters of the inlet, and came back on a line parallel with that on which it had set forth. It glided past the water beneath it, and, describing another curve, came slowly to the ground within a rod of the starting point.

"Splendid!" cried Arthur, as Gascoigne leaped from his seat.

"A fair beginning," said the Frenchman quietly. "Now, perhaps, you would enjoy it to go with me"

Arthur's eyes glistened. With Gascoigne and the mechanic, he pushed the Venture slowly back to her track. The cable was attached, and the mechanic was instructed how to give them their start with the motor-car. Gascoigne took his seat.

"Climb up to this place," he said to Arthur, who hastily complied. "Now take a firm hold of these rods," continued the aeronaut, "and sit quiet. Let nothing excite you." He gave the word to the mechanic, and they glided forward.

What followed was like a dream to Arthur. He seemed to slide upward from the earth without a visible reason. He caught a glimpse of the gables of his own house over the trees, saw other more distant buildings, felt the swift rush of the wind. But what most affected him was a joyous sense of buoyancy. It seemed to him that, if he should throw himself loose, he would go floating on whither he willed.

They turned and sped back. Arthur looked down at the water, which, ruffled by the breeze, appeared to race by them like a mill stream. He hazarded a glance out toward the bay. Those gulls out there were not freer in their soaring than he.

They made the second turn and descended, touching the earth like thistledown. Arthur drew a long breath. A man approached across the sand. Arthur recognized him as Martin, the detective, and went to meet him, the excitement of his first flight giving place to anxiety. "Any news, Mr. Martin?" he asked.

"Nothing definite," replied the detective. "Would you mind introducing me to your friend, the aeronaut?"

"Certainly not. Glad to," said Arthur, leading the way.

Martin studied the machine thoughtfully. "That's a fine performance you make, Mr. Gascoigne," he said. "And it's a beautiful machine. I suppose you can travel some distance."

"I have made eighty two kilometers without trouble," replied Gascoigne, "and I came down then only because I was tired."

"But with two persons?" persisted Martin.

"I would venture twenty kilometers," said Gascoigne. "We went about a kilometer. Mr. Rhoades and I—almost the distance across this inlet."

"I'm a detective," said Martin abruptly, "in charge of the search for Miss Dayton."

"Yes? I have, of course, heard."

"I should like to ask you," continued Martin, "a few things about Mr. John Langfield. You know him, I believe."

"In Paris I used to see him." Gascoigne was courteous. Indeed, his extreme of courtesy was his only indication that interruption was unwelcome.

"Was he much of an aeronaut?"

Gascoigne hesitated. Arthur interrupted. "Talk freely," he said. "If you can help Mr. Martin, you will be doing me the greatest favor."

With a slight nod, Gascoigne told what he knew. "M. Langfield never went very far, that I knew about. He

built one machine, like the earlier type used by Farman, but there was bad luck with the motor, and it was never seen to fly more than a hundred yards. I do not know that he built another. He returned to this country about that time, and I have not seen him since until yesterday, when he was at a distance."

Martin meditated. At last he said:

"I am going to ask a favor of you, Mr. Gascoigne, and I think that Mr. Rhoades will back my request."

"Back it?" Gascoigne was puzzled.

"Yes—support it. I am going to ask you to take me up in your machine. I am going to ask you to take me far enough and high enough so that I can look down on Mr. Langfield's roof."

"Why?" exclaimed Arthur. "Do you really suspect him?"

Martin answered with great seriousness. "Yes," he said, "I do. There is a particular reason why I want to look at his roof. Will you do that for me, Mr. Gascoigne?"

The aeronaut looked at Arthur, who nodded affirmation; then he turned toward the Venture. "Come," he said, "we will put it on the track. Then I will see what I can do to satisfy you, *monsieur*."

To Arthur, as he saw the Venture shoot out over his motor-car and ascend by a long slant to an elevation of seventy-five feet or more, came many surmises. The least hopeful view regarded Martin as one who, desiring the experience of flight, made use of his position to get himself a pleasant favor.

But the detective, clinging there to the little seat, was giving his whole attention to the distant house. True, he was conscious of the novel sensations of this first journey through the air, but he did not permit himself to enjoy it. He had work to do.

The air-ship sailed farther and farther. The Langfield house was now but a few hundred yards away. "All right," Martin suddenly called to Gascoigne. "You can turn now."

Obedient to the touch, the Venture swooped around and, descending to a lower level, glided back toward its station. The detective had made the discovery he had hoped for. On John Langfield's roof, which had been bare the evening before, was a formless mass about twenty feet long — formless because it was covered by an old sail

"If that ain't what I think it is," muttered Martin as he stepped down upon the sand, "then I'm a Dutchman."

Arthur scanned the detective's face, but he received only the recognition of a noncommittal smile

"Well, *monsieur*," said Gascoigne, busy over his machine, "did you see what you expected to see?"

"I saw enough to increase my suspicion," replied Martin. "Tell me, how slow will this machine go and stay in the air?"

"Twenty five kilometers the hour—about fifteen of your miles. I have never tried less."

"H'm! What would be the effect if, while you were in the air, you were to drop a heavy weight. Would the sudden difference in your load capsize you?"

"No-o-o. I t'ink not. Much would depend on whether I knew that the weight was to change. By deflecting my tetrahedrons I could effect a counterbalancing that would save me."

Martin's glance traveled to the distant Langfield house. "How close can you come to any object—like a tree or a house?"

"In this light breeze, perhaps two meters. Nearer would not be safe. We take many risks in these experiments, *monsieur*, but no more than we have to. He who flies the safest way may live to fly another day." A sunny Provençal smile shone on his dark face.

"I would give a lot," said Martin meditatively, "to be set on Langfield's roof. If you would take me at a low speed across the end of the roof that is farthest from the skylight and let me drop, you would be doing a great service"

The Frenchman looked at him in astonishment. "That would be a very delicate maneuver, *monsieur*."

"I know it," said Martin. "But if you see your way to the trial, it will be very much worth while to me.

"But to give you access in this fashion to the house of a man I know!"

Arthur interrupted: "It means as much to us all, Gascoigne."

The aeronaut knitted his brows. Then he asked:

"Are you certain that you understand the probable danger to yourself?"

"I'll chance that." Martin spoke confidently. "If any harm comes to me, you'll not be blamed. I'll see that any injury to your machine is made good."

"Oh, it is not that," exclaimed Gascoigne. "If I attempt your plan, it will be because it appeals to me as what you Americans call a —a sporting proposition. Is it not that?"

He turned to Arthur, who nodded.

"And you," he continued to Martin—"you would have to let go at exactly the right moment."

"I know," said Martin. "I understand the risk. But I am anxious to try it. Will you help me?"

Gascoigne hesitated. He looked at the Venture, then at Martin; nor did Arthur's eager face escape his notice. "Very well," he said at last. "It shall be so."

Before the start was made, he gave Martin careful instructions as to his position. "You must ignore the seat," he said. "Cling with your hands to these two rods—here and here. Place your feet on these lower rods. When we approach the house, release your feet, and hang free, by your hands. Do not swing back and forth. The moment you see the roof under you, let go."

"All right," Martin took his position. "And say, Mr. Gascoigne, don't go any nearer the skylight than you have to."

The start was made. Gascoigne sent the Venture higher than before and circled inland over the trees, swinging gradually around so that Langfield's house would lie under the natural course of his return curve.

Braced in the framework, Martin peered ahead. They had swept to a point where the Langfield house lay between them and their starting-place.

Suddenly Gascoigne set the air-ship on a downward slant. It seemed to be heading straight for the side of the house; then, striking a low level, it glided upward again at a reduced speed. Gascoigne was planning just to clear the parapet of the roof on this rise.

Martin took his feet from the framework and hung by his hands. A moment more and the Venture topped the parapet. Without changing his position, the detective let go his hold. He struck the roof lightly on his toes, took an involuntary step forward, and fell heavily on his hands.

The gravel roofing scratched and cut his palms, but he did not notice it, for as he scrambled to his feet he realized that he was close to success or failure. He cast one look at the Venture, which was soaring rapidly away toward the distant beach.

Then, on his hands and knees, he crept cautiously toward the skylight.

CHAPTER XI.

Confession and an Offer of Penance.

WITH an alertness that did credit to her years, Mrs. Kernan hurried up the stairs from the second floor and knocked at the closed door.

"Who is it?" asked the man within.

"It's Norah."

The sound of steps, and the door—which showed signs of recent mending—was unlatched and thrown open. The man looked at her questioningly.

"Sure, Mr. John," she said, entering, "ye've given me no chance to tell ye what them villains did last evenin'."

The man sighed. "Oh, well, Norah, I fancy that you handled them correctly."

"But ye don't know all, Mr. John. The leader of 'em, now—ye can't guess who it was."

"No? I talked with him, though."

"But who do ye think he really is?"

"It makes little difference, Norah, since we're rid of him."

"I ain't so sure that we are that, Mr. John. Ye see, I know him of old. He's a suspicious devil—beggin' your pardon! an' as smart as he is mean."

The man looked at her more attentively. "You seem to know him," he said.

"I ought to." She paused to give her revelation more effect. "I used to be married to him."

"Oh! Then he is—".

"Tom Martin, an' no other—an' him owin' me seven hundred dollars of honest alimony! Ah, Mr. John, when I left your mother's service to become his wedded wife I little thought what trials was in store for me."

The man meditated. "Then you think, Norah, that he was not convinced?"

"I know he wasn't. Oh, his cunnin' ways ain't new to me, Mr. John. I could tell his thoughts by the look of his eyes."

"Thank you, Norah; you are good and faithful, but—"

"Sure ye needn't feel discouraged, Mr. John," she cried. "He won't get in here again. Ye ought to have him arrested for house-breakin'."

"What good would that do?" he said. "It would only attract attention to me. Not that I care very much—now."

"Care? Of course ye care."

He smiled sadly. "Thank you, Norah. Some other time. I'm busy now."

He waved her toward the door, and, after a hesitant moment, she departed.

The man returned to his work. Opening the door of the safe, he took out a box about two feet square. It was of wood, but it seemed to be heavy, for his arms were tense as he carried it to the desk.

He unlocked the box with a small key which he took from a drawer of the desk, then lifted the cover. Within, protected by a lining of lead, was a large number of small lead boxes. Those at one side were labeled neatly.

Selecting one of the unmarked lead boxes, he opened it, and disclosed what appeared to be a black stone, cut in the form of a lens. Next he took from the safe a diaphragm shutter, not unlike those that are used with the lenses of cameras. It was made of lead, but the edges were carefully rimmed with steel. He fitted the black stone into the shutter, which was open on the under side, except where three minute clamps were so disposed as to hold the stone in place

The man took some time to make certain that he had the stone exactly centered in the mechanism; then, inverting it, he worked the tiny lever which opened and closed the shutter—scanning the numbers that indicated the sizes of the different apertures. These numbers ran from one to three thousand. Under fifty, each number was given; above that, the indicator jumped by tens.

On the scales near by was a block of copper. It weighed, by the evidence of the dial, exactly one pound, and it was riveted firmly to the platform of the scales. Carefully closing the shutter, he laid it on the block of copper, the open side down. This added a pound to the weight on the scales.

His next action was to take from a rack near at hand a weight marked "twenty pounds." He placed it upon the platform of the scales, and the dial promptly registered twenty-two pounds.

Stepping to the window, he glanced out at the sky. The afternoon was advanced, and the sun was well down in the west. Nevertheless, as though fearful of its effect, he placed on the copper block a short section of lead pipe, which surrounded the shutter and prevented any light from falling on the diaphragm except such as might reach it from a comparatively narrow angle above. The dial of the scale now registered twenty-three pounds and a fraction. The man cut slivers from the lead pipe until the weight was an even twenty-three pounds.

The preparations for the test were now complete. The section of lead pipe that surrounded the shutter was large enough to admit his hand. He pushed the lever of the shutter until it reached the figure one. At the center of the diaphragm appeared a minute opening.

The effect on the scales was marked. The dial registered twenty-two pounds. Apparently the load had become lighter.

He pushed the tiny lever to the next number, increasing the size of the aperture, and the scales registered only twenty-one pounds. Then, pound by pound, he reduced the weight until the indicator on the dial pointed to zero.

He placed another twenty-pound block on the scales, and brought that down to nothing by increasing the aperture in the diaphragm. At last, four of the twenty-pound weights and one of eighteen pounds were piled on the platform of the scales, and the dial made no registration at all. The lever of the shutter was exactly on the mark "one hundred."

As he gradually closed the diaphragm, the scales showed the difference, and the indicator moved around to one hundred.

He removed the black stone from the shutter and replaced it in its little lead box. Then he prepared and attached a label which read: "No variation up to one hundred pounds. Sea-level."

The little box was then returned to the larger box, which was locked and replaced in the safe.

The man strolled to the window and stood there listlessly, with his hands in his coat-pockets. His face was sad; his eyes were gloomy. For many minutes he remained motionless; then, sighing deeply, he shut his jaws together firmly and, with the quick, sure movements that indicated a decision reached, strode to a door at the opposite end of the room and flung it open. Through the little passage he went, to the door at the farther end.

Mary Dayton, when she heard the knock at her door, knew at once that it was her captor, and not the housekeeper. How she knew she could not have told, nor did she ask herself.

She had not seen him since the marvelous, dream-like ride through the upper air of the night, but in the hours of pain, before the swelling of her ankle was reduced by the sympathetic ministrations of Norah, he was much in her thoughts. Her sprain, though painful for the time, troubled her now scarcely at all, and at his knock she got to her feet readily enough.

"Don't stand up," he commanded as he came in. "Your ankle must be weak. Spare it all you can."

"It is not at all bad now," she said, sinking into a chair. "Norah is a good nurse."

Thus they might have talked had she been a guest instead of a prisoner. He had left the doors open, she noticed. Was it because he thought her unable to go far? Or was he under the stress of some perturbation that made him careless of precautions.

He came to the point at once. "Miss Dayton," he said hurriedly, "I am going to take you home."

"What? My father—"

"No, your father has not met the demands."

"What is it, then?" she cried.

"Never mind that," he replied. "You are going home. Isn't that enough?"

With level eyes she studied him. His face was tired and drawn.

"No," she said thoughtfully; "that is not enough. You told me yourself that you were not a common criminal. I think you will admit that I am not a common prisoner. Now, why do you suppose that I have taken my captivity so quietly? Why have I not been sunk in grief? Why have I even been really interested in the things that happened here?

"In the first place, as soon as I saw you I knew that no harm would come to me. Then you assured me that my father would not worry about my safety—and I—I believed you when you told me that.

"What is even more than all this, I knew at once that you were a good man—not bad, but good—terribly mistaken, but good. If I admit all this, you owe it to me to tell me exactly why you are going to take me home."

He was looking at the floor. Some moments passed before he answered. "The reason," he said then, "is that I have found myself mistaken. No"—as she prepared to speak—"hear me first. I will tell you why I have done what I have done.

"I was brought up in a hard school, Miss Dayton. My father died so long ago that I do not remember him at all, and my mother had to earn her own living and mine. Fortunately the family was no larger.

"When I was sixteen, and already at work for a firm of decorators in New York, one of my mother's relatives left her some money—not a great fortune, but enough. Thank Heaven, her remaining years were peaceful, happy ones! My only regret is that, when the money came, I was too young to have done much for her myself.

"I was now able to study art—two years in New York, and then Paris. It was in Paris that my mother died. After that I continued to work hard at my painting. Three years ago I received honorable mention in the Salon. Then something happened that made me very bitter.

"I had a friend—an American of about my own age. We studied in the same atelier, we had the same ideals; and his artistic promise was much greater than mine. But he was called back to New York by his father and set to work in a brokerage house.

"At first the change nearly broke his heart. There never was a man less fitted for a business career. But in time I began to see a change in the tone of his letters. With his lively interest in everything that

was pressed upon his attention, he had become fascinated by his new work. More and more he wrote about the stock market. The daring of the great speculators seemed to enthrall him. He admired your father greatly.

"I need not go into all the details. If I could make you understand how much that man's friendship was to me, you would realize how I felt when word came that he had embezzled a large sum, lost it in a stock deal, and—and killed himself."

"How terrible!" exclaimed Mary.

He gazed at her sorrowfully. "The deal in which my friend lost the money was one of your father's. I did not blame your father. He, of course, never had heard of my friend.

"But I made a vow that, as soon as I could find the way, I would prevent your father from conducting new deals that would carry irresistible temptations to men who have no business in the market. I made up my mind to drive your father out of the Street. It was not to be revenge, but justice.

"Well," he sighed, "I found a power that determined my way to act. You know what I have done.

"And now," he went on moodily, "I see that I am wrong—all wrong. Your father was the unconscious destroyer of my friend. But if I harm your father, who after all in one sense is innocent, I am bound to harm others who are entirely blameless. I regarded your father's methods as unwarranted, but now I have attempted methods more unwarranted than his own."

"How did you come to see your mistake?" asked Mary.

"You have taught me my mistake," he said—"by being you. I am not ashamed to confess it. Love has done this. But don't be alarmed, Miss Dayton—I shall not say any more about myself. I have dragged you into my life for a few days, and there is no reparation that can be made unless it pleases you to know that you have shown one man his error."

Her heart fluttered strangely. "You want to take me home?" she faltered

"Want to?" he exclaimed fiercely. "What I want most is never to let you go. If I followed my longing, I would put you in the air-boat and carry you to some distant place and win you. Yes, I would win you! I would make you forget everything except yourself and me."

The fire died out of his eyes. "But I must take you home," he finished. "I hope that all this may some day disappear from your memory."

"But what of you?" she managed to ask. "There are sure to be inquiries. It will not be safe for you."

He laughed. "Oh, I sha'n't run away. They will find me here."

Mary was troubled. "But is that necessary?" she cried. "For my part, I can ask no more, since you see your mistake. And my father—"

"Will never be satisfied until I am punished." He rose. "And it is right that I should be punished."

"Even if I do not wish you to be punished?"

He looked at her in bewilderment. "Do you mean—"

"I mean that I will never identify you as my captor. Even my father cannot make me speak."

"But why—"

"Because, in spite of your mistake, you are a man. Because, though you dared wrongly, you dared greatly. Because you have had the courage to admit your error as soon as you saw it. Because from the first moment I was brought here you have never permitted me to be afraid. Because—"

"Well?"

"Because I like you."

"You can say that after my confession?"

"Yes."

"After the last part of my confession?"

The blood surged into her cheeks. She struggled vainly for words. And then, suddenly, there was a rush from the door. A swift motion, and handcuffs snapped shut over the man's wrists. A voice exclaimed roughly: "I've got you now, Mr. John Langfield."

The manacled man shrugged his shoulders. "Very well, Mr. Martin," he said; then, with a sudden note of alarm, "Look to Miss Dayton!"

For the second time in her life Mary Dayton had fainted.

(To be concluded.)

Roll Call of Veterans.

Brief Records of Some of the Men Who Have Made the Past of the Railroads and Builded for the Future.

D. L. & W. PRIZE WINNER.

Foreman Hall, a Track Veteran Who Carried Off the Silver Medal and Bonus for Best Section.

DISTINCTION has come recently to John H. Hall, a Lackawanna veteran, through the award of the first prize for the best kept section of track between Denville and Hoboken. Mr. Hall, who lives at Denville, New Jersey, has been an employee of the Morris and Essex division of the Lackawanna for forty three years. For twenty-three of them he had charge of the Morristown construction tram.

In 1899 he was made foreman of the Denville section, and the reputation of the section during his service has been high. The prize he has just won is a medal of solid silver and a check for sixty dollars

Mr. Hall is, sixty-one years of age, and has two sons in the railroad service, one of them a train-despatcher on the Norfolk and Western, and the other an engineer on the Erie

LONG A CHIEF CLERK.

George Sneden Has Held the Post at Long Branch for Twenty-Seven Years, and Still Occupies It.

GEORGE V. SNEDEN is one of the best-known veterans of the New York and Long Branch Railroad. He joined the road, which was at that time operated as the Long Branch division of the Jersey Central, but is now operated jointly by the Central and the Pennsylvania, in 1882.

It is, however, thirty-five years since Mr. Sneden became a railroader. Having taken a special course in civil and mechanical engineering at Lehigh University, he joined the engineering corps of the road he has since served for so long. The road, then under construction, having been completed, Mr. Sneden entered the employ of the New Jersey Southern Railroad as a clerk at Manchester, now Lakehurst.

Two years later, in 1877, he was transferred to the offices of the general ticket-agent, the auditor and cashier, and the general manager, this progress occupying until 1880. For one year after that he was assistant to the division freight-agent at Red Bank, keeping the car records and doing the telegraph work in addition to his other duties.

It was on the 1st of February, 1882, that Mr. Sneden was assigned to his present position as chief clerk to the superintendent, and he has held the position continuously through the succeeding twenty-seven years.

GARRABRANT RETIRES.

Veteran Inspector of Motive Power Goes on the Retired List of the Pennsylvania.

THE pension roll of the Pennsylvania has had added to it the name of Smith Garrabrant, who, after half a century of service has laid aside the labor and responsibilities of railroading for the quiet of retirement. Mr. Garrabrant first began railroading in 1859 when he entered the employ of the New Jersey Railroad and Transportation Company as a fireman. This railroad afterward became the United Railroads of New Jersey division of the Pennsylvania

In 1863 Mr Garrabrant was promoted to engineer and given charge of a passenger-engine between Jersey City and New Brunswick, and Jersey City and Philadelphia. He performed this work for ten years, when, in 1873, he was made assistant road foreman of engines. He did excellent work during the Philadelphia Centennial, when the responsibilities of his chief's position were thrust upon him owing to an accident in which the road foreman of engines sustained a broken knee-cap.

In 1882 he was made roundhouse foreman and engine-despatcher at Waldo Avenue, Jersey City, and in 1904 was promoted to the position of motive power inspector at Jersey City, the position he held on his retirement.

Mr. Garrabrant has served under six presidents of the Pennsylvania, from Thomas Scott to James McCrea. He has one son in the service, Wilbur F. Garrabrant, who is superintendent of air-brakes and steam-heat for the Pennsylvania.

HE HELPED OPEN KANSAS.

Retired Santa Fe Veteran Who Built the First House at Cummings Before the Railroad Came.

ROBERT KENNISH, one of the retired veterans of the Santa Fe, was one of the Kansas pioneers. He built the first house in Cummings, Kansas, kept a general store, and made his own way-bills for freight sent over the Santa Fe.

Cummings, between Atchison and Topeka, was one of the first stations on the road. At an early date Mr. Kennish was made station-agent, and held this position for thirty four years.

Mr. Kennish recalls that he attended the bridge opening at Atchison, at which the famous "Little Buttercup" was proudly exhibited to an admiring populace as being capable of drawing three passenger-coaches. The following notation was made on Mr. Kennish's pension application by his superiors: "He has always looked after the company's interests, faithfully discharging all duties assigned to him."

BELL'S CIVIL WAR FEAT.

Now a Peaceful Conductor, He Was Once a Gallant Soldier and Captured a Regiment Single-Handed.

CONDUCTOR JAMES L. BELL, of the Atlanta and West Point Railroad, Georgia, might have proved to be the possessor of military genius of a high order if the chance for development had found him. As it is he has to his credit one of the boldest and most successful feats of the Civil War.

Serving as a Confederate sergeant, he, practically single-handed, captured a whole regiment of Northern troops by a surprise so audacious as to be almost incredible. At this time Capain Bell looks peaceful enough as he guides the destinies of the New York and New Orleans Southwest Vestibule Limited between Atlanta, Georgia, and Montgomery, Alabama. He has held this run for over fourteen years of the forty-five that he has been a conductor on the Atlanta and West Point.

It was in October, 1864, that he made the *coup* which brought him distinction. General Grant was making his last advance on Richmond. Bell was a sergeant in the Seventh Georgia Regiment, which was then engaged with the enemy near Fair Oaks.

During a temporary lull for the Seventh, while fighting was going on all around, the young sergeant thought he would reconnoiter a little on his own account. As told in the *Railway Conductor:*

"He climbed the breastworks and zigzagged across the field through the high weeds to the head of a ravine. Here he stopped transfixed by the sight before him. There in the ravine among the weeds was the entire regiment of Federals. For an instant he stood motionless in dismay, then a daring scheme flashed into his brain, and dashing forward, he fired his musket and shouted, 'Surrender; lay down your arms!'

"Taken wholly by surprise, bewildered by the yelling and firing, and believing that the enemy was upon them in full force, the men rose up one after another and surrendered, each laying down his arms at Sergeant Bell's command.

"The Georgia soldiers, hearing the shouting and firing of their comrade ran quickly toward the spot, yelling and firing as they came, but before they reached the ravine James L. Bell had captured the regiment of over three hundred men and the colors of the Nineteenth Wisconsin Regiment, taking the colors from the hand of the color-bearer, who refused to give them up until he saw that the others had laid down their arms.

"The captured men, crestfallen and chagrined, were sent to the rear and later to Richmond. The flag-staff was tipped with a silver spearhead and had two silken tassels. Sergeant Bell took the Stars and Stripes and presented the staff to the Seventh Georgia Regiment. The colors of the Seventh Regiment, still on the Wisconsin staff, are now in the Georgia Capitol, and on the staff may be read the following:

"'Colors of the Seventh Georgia Regiment. The Nineteenth Wisconsin Regiment, with this staff, was captured by Sergeant J. L. Bell, Company K, Seventh Georgia Regiment, October 30, 1864, at Fair Oaks, Virginia. The colors were detached and turned over to Brigadier General G. T. Anderson, commanding.'"

Narrow Escapes of a Boomer Brakeman.

BY FRANK VAN HORNE.

THE TRUE STORY SERIES. Accidents will happen on the best of railroads, but sometimes it is interesting to contemplate a few that nearly happened and didn't or some that came near being serious, but yet fell miraculously short of it. In a previous issue we have cited some of the narrow escapes of men who have been struck by fast trains, and not only lived to tell of it, but were practically uninjured.

In the article that follows, a "boomer" brakeman recounts some of his own experiences in shaving the ragged edge of danger, and coming away scot-free. We will venture the assertion that to few men has it been granted to stand so close to destruction and yet avoid the grim clutch.

TRUE STORY, NUMBER THIRTY-TWO.

He Has Fallen from the Top of Box Cars, Rolled Against Moving Wheels, Dragged with His Hand between Flange and Rail, and Lives to Tell It.

MARINERS, steeple-jacks, aeronauts, and other persons who follow extra hazardous callings, are commonly spoken of as leading a charmed life. This is not the outgrowth of superstition, and is not confined to any certain class of persons. By common consent, every man is granted an inherent right to one miraculous escape from death; but should the number of these escapes total a half-dozen or more, sober-minded men, little given to superstitious inclinations, are wont to look askance thereat, and to give ear to the belief that certain individuals "lead a charmed existence."

By no means the least hazardous, among the callings which endanger human life, is that of the railroad man; but, as the reader will observe in the following account, which is true in every respect, and may be verified from the records of the various roads mentioned therein, something of humor, as well as the ever-present element of danger, ap-

EDITOR'S NOTE.—All the stories published in this True Story Series have been carefully verified by application to officers or employees of the roads or companies concerned who are in a position to be acquainted with the facts. Contributors should give us the names of responsible persons to whom we may apply for such verification, in order that fruitless inquiries may be avoided. This condition does not imply any lack of confidence in the veracity of our contributors, but is imposed merely to give greater weight and authenticity to the stories.

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pears constantly in the every-day life of the average railroader.

Let me explain, at the outset, that it is no uncommon thing for brakemen or fireman who have, either through carelessness or otherwise, happened upon accidents wherein company property has been destroyed or a fellow employee so badly injured that peremptory dismissal follows, to "work under a flag," *i.e.*, hire on another road under a fictitious name, by which means the offender is able to clear his personal record of a "dischargable offense."

In the spring of 1891 I was employed as local brakeman, under the name of Vanderpool, on the C., M. and St. P. R. R., between Greenbay and Appleton, with Conductor McCutcheon. Early in the morning, following a night of rain and sleet, which froze as it fell, we pulled into the little town of Hilbert Junction. We had about twenty seven cars, with the local merchandise cars on the rear.

I was braking ahead; and as my services were needed in handling the station merchandise, I swung off the engine as it passed the platform, going at a brisk speed. No sooner had my feet touched the icy platform than they flew straight into the air, landing me with considerable force on my shoulders and the back of my neck. I slid along the platform toward the wheels at a great rate, clutching vainly at the plank floor in an attempt to stay my flight to certain death, which waited at the end of my unwilling toboggan toward the rails.

Sliding on in this manner, my feet struck heavily against an old cart standing on the platform near the track. To render my situation the more hopeless, this obstacle retarded the movement of my feet, thereby swinging my head inward almost against the rapidly moving wheels. In this position, powerless to stop myself, I slid to the edge of the platform, which I reached with just enough momentum to roll me lengthwise into the narrow space between the end of the boards and the rail

As I lay in this narrow space, with oil-boxes and journal ends passing over my body, each one just touching my hips and shoulders, twenty-two cars passed me before the train could be brought to a stop. Several persons on the depot platform who witnessed the accident were sure that I was ground to pieces, and their surprise can be imagined when they saw me rise up, brush my clothes, and go about my business. The only injury I sustained was to a suspender strap.

Later in the year, on the same road, we were doing local switching in the yards at Fredonia. It was between ten o'clock and midnight. The darkness was intense, and I could make out absolutely nothing beyond the narrow limits of my lantern's feeble light. I was running along on top of the train, which had been cut in two in order to shove some cars on the side track, when suddenly, as if it had been a ghost train, the cars disappeared from under my feet and I felt myself falling.

Ran Off the End.

I was going in the same direction in which the cars were moving, but had reached the end of the "drag" one car sooner than I expected, and there I was, falling through space, in front of a moving train, with no chance to clutch at even the drawhead, as the spring from one car to where I expected to find the next had quite naturally carried me out beyond the end of the car. My feet struck the ground fairly in the middle of the track, the momentum of my body throwing me instantly on my face, in which position two cars passed entirely over me, the brake-rigging scraping and tearing my jumper and overalls almost entirely off me, but only bringing blood in a couple of places along my back.

At the end of this trip I resigned and headed for New Orleans, where I went to work as brakeman for the L. and N., running from New Orleans to Mobile. My first trip on this road proved my undoing. We started out of New Orleans early in the afternoon, and all went well until some time after nightfall, when we arrived at a little way station at which we had instructions to pick up a car containing a jack of considerable value.

The night was dark and drizzly, and the conductor cautioned me to look carefully at the doors and ascertain without doubt that they were fastened securely. Had these instructions been faithfully

followed, this incident would not have happened; but, as is too often the case, I merely glanced in the car, with the aid of my lantern light, and, seeing the animal inside, gave the signal to go ahead. We made no more stops until we reached Mobile. Here we put the train away and went to bed.

IN THIS POSITION, POWERLESS TO STOP MYSELF, I SLID TO THE EDGE OF THE PLATFORM.

Jack, Jack, Who's Got the Jack?

We had hardly straightened out in our bunks when the number clerk came into the caboose with a message, asking the present whereabouts of the jack we had picked up at Scranton. Being somewhat nettled at this, the conductor replied: "If you think the darned mule is in the caboose, you can search it."

Investigation revealed the fact that one of the doors of the car in which the jack was riding had been left unsealed, and the donkey had "flew the coop," somewhere between Scranton and Mobile. Seeing that the blame would naturally, and quite justly fall on me, I wired my resignation, and started for Texas. In the course of a few days the mule showed up at a farmer's house half-way between Scranton and Mobile, about fifteen miles from the track, unharmed, and with a voracious appetite.

The month of November, 1906, at five o'clock in the morning of the third day,

I WAS HURLED CLEAN OFF THE ENGINE OVER AN EIGHT WIRE FENCE ALONG THE RIGHT OF WAY

found me firing engine 416, oil-burner, on the H. and T. C., between Ennis and Hearne. We had just passed the little town of Alma, and were going at a high rate of speed, nearing the terminal, and as a fireman's duties on an oil-burner are not very strenuous, I had already begun washing up, when, with a deafening explosion, the crown sheet gave way and the engine literally "blew up."

It seemed as if the earth heaved upward, lifting the great locomotive into the air and flinging it round at right angles to the track, and landing it on the right of way, almost clear of the track. I was hurled clean off the engine, over an eight wire fence along the right of way, several feet into a cornfield adjoining.

The head brakeman, who was on the engine at the time, occupying my seat, was thrown out over the tank and instantly killed. The engineer, a man of powerful build, was crushed in such a manner as to render him unconscious and cause his death shortly after the accident. Barring a few slight bruises, I was unharmed

This cured me of the desire to ride the "smoky end," and in a short time I was working as brakeman again for the Santa Fe, between Gainesville, Texas, and Purcell, Oklahoma. One morning we were "local," moving south with three

cars of gravel in the train. These cars were the old-fashioned dump-cars, built for cinder service, but were being pressed into use for hauling gravel and ballast.

To dump this car, the side was opened in halves, the upper half swinging out and the lower half swinging down near the level of the rail, and along the edges were large hooks, placed at regular intervals, for securing the doors in position for reloading. These three cars had been unloaded, and we had orders to meet a north-bound train at Bomar, we to take siding.

On arriving at Bomar, we found the opposing train already in. As we pulled into the siding, I dropped off the engine, to "bleed," or release, an air-brake that was sticking on one of the gravel cars. To do this, it was necessary for me to stoop beneath the side of the car to reach the short bleeder rod by which the brake could be released.

Taking a Big Risk.

As I reached under the car to do this, my foot struck a pile of spikes, and I was thrown forward on my face, with one wrist under the forward wheel of the back truck. In a frantic effort to save my wrist, I kicked out with both feet, hoping to strike something solid, and be thus enabled to extricate myself. It was a lucky move for me, as my left foot caught in one of the hooks on the dump door of the car which was still hanging down.

With a supreme effort, I raised my other foot up to the hook, and by shoving ahead with all my might, managed to stretch my arm far enough forward to save my hand from being cut off at the wrist, but not far enough to extricate it, or save it from injury, which resulted in a stiffening of my right wrist which threatens to be permanent.

In this position, with my wrist held firmly, as in a vise, between the flange of the wheel and the rail, by sheer reach of limb, I was able to shove my arm along in front of the wheel until the train could be stopped. The distance seemed endless; but, in reality, Charlie Bishop, one of the quickest and most watchful engine men I have ever met in my railroading career, brought the train up standing in less than two rail-lengths by a tremendous application of air. This I account one of the most remarkable escapes from maiming I have ever known anything about.

On the "Hot-Shot" Freight.

The next spring found me on the same road, on the division between Cleburne and Gainesville. One night in the month of May, I was called to go out on 38, a manifest "hot-shot" freight, going north out of Cleburne, having right over all trains except first-class. Everything moved along in great style, and we were making almost a record run, until we reached a large curve which describes almost a semicircle, near the little village of Sanger.

The curvature is not sharp, and the gradient almost level, so we were sliding around it at a high speed when the air went suddenly into "emergency," quickly bringing the train to a standstill. Supposing that the train had parted, I jumped out of the engine, and made my way back as fast as the rain and darkness would permit. Not more than ten cars from the engine I found the break, and also a draw-head out.

As the damaged car contained lumber, without waiting for the conductor to come up I took the head end of the train to the next station and set the bad order car out. In the meantime the rear brakeman, whose name was Briggs, had gone back around the curve to flag against No. 18, a north-bound passenger which was soon due; and Conductor Cato, on coming to the break, discovered the loose draw-head, and rolled it off the track.

The Missing Car.

As soon as I returned with the forward portion of the train, we coupled up, called in the flagman, and prepared to proceed. It was raining in torrents, and, of course, we were expecting a quick response from the flagman, but he failed to show up, and, as our time was too short to wait longer, we went ahead without him. At the next station we found that the passenger-train was two

hours late, and, therefore, proceeded to the terminal ahead of them.

On arrival, the conductor delivered his train to the yardmaster and went home. He had barely eaten his breakfast when the call-boy handed him a message, asking the whereabouts of a certain car which they had been unable to find. Muttering, "I wonder if they think I brought it home with me," he reluctantly donned his raincoat and boots and proceeded to investigate.

A thorough search of the line of cars we brought in, and also of the entire yard, failed to throw any light on the situation. The car had apparently disappeared from the face of the earth. Turning to the clerk, the conductor remarked, "It's beyond me," and resigned the case to the railroad detective, stating that the rear brakeman, who had not yet arrived, might have made off with it concealed on his person.

At this instant No. 18, the delayed passenger, rolled up to the office and our flagman stepped off and announced that we had lost a car on the big curve, that he had found it on going back to flag, that it was clear down the side of the dump, and that not a single tie was broken in two. Thus was the car that had so mysteriously disappeared from our train, without our knowledge or consent, accounted for.

IN A FRANTIC EFFORT TO SAVE MY WRIST, I KICKED OUT WITH BOTH FEET.

Bits of Ballast.

Some Scraps of Gossip, Old and New, That Have Floated into the Roundhouse or Dropped Here and There Along the Road.

CINCINNATI coined a new word last year. In that enterprising burg to speak of a person as a "notel" was to scornfully imply that the person in question had no telephone fitted in his residence or office

ABOUT one-fourth of all the rural telephones in the United States are said to be in use in Iowa. It is also claimed that Iowa has a larger number of small local telephone companies, rural lines, and farm telephones than any territory of its size in the world.

ON the Missouri Pacific there is an engineer who is said to be worth $75,000. His name is "Blackie" White, and he inherited most of his wealth, though he has added to his inheritance by his thrift and industry. He has been in the service for twenty years

JARED BARKER, the fifteen-year-old boy who saved the Pennsylvania's eighteen-hour flier some time ago, is being educated and taught telegraphy at the expense of the company, and when qualified will be taken into the service. Barker saw a big log on the track and notified the proper authorities.

IT was reported about two years ago that a London inventor had discovered a process for producing smokeless coal, and that the president of the Society for the Prevention of Smoke had bought up the invention. Nothing more has been heard of it here Perhaps the whole thing went up in smoke

SOME time ago it was announced that for the first time in the history of the credit and demerit system on the Wabash a woman was the recipient of credit marks. Miss V. M Baker, an operator at Blakesley, near Montpelier, Ohio, found and reported a broken rail, thus averting a wreck to a freight-train

ABLAST on the Mexican Central's extension into Guanajuato, about a year ago, uncovered a vein of silver and gold ore which assays 684 grams silver and four grams gold to the ton. An American, W S Davis, has acquired the claim and is working the vein for the silver. It is two feet wide at a depth of ten feet.

COLLISIONS four
Or five she bore,
The signals wor in vain;
Grown old and rusted,
Her b'ler busted,
And smashed the excursion train.
"Her end was pieces."
—*South African Railway Magazine.*

IN a recent periodical it is stated that the greatest distance the human voice has ever been conveyed is from Montreal to Winnipeg, 1,430 miles. It was done on a copper wire installed by the Canadian Pacific for use in their telegraphone system, by which a telegram can be transmitted while a telephonic conversation is being carried on.

A PAINSTAKING engineer is Dan Jones, of the Northwestern, and one with a superstitious reverence for the Book of Rules, at least so his friends say. Arriving one day at Cornell, Wisconsin, he remembered that he had not blown his whistle when about to leave Holcombe. He immediately reversed his engine and backed up the grade ten miles to Holcombe, blew his whistle and resumed the journey. Then he remembered that he really had blown it before, and now he carries a phonograph in the cab.

"INFORMATION FOR THE PUBLIC."

BY EDGAR WELTON COOLEY.

Some of the Little Things That Help To Make Traveling Pleasant for All Concerned.

NOTICE is hereby given that the Boggville and Pumpkinburg Railroad is operated solely in the interests of its stockholders and directors. Trains are run for the purpose of giving the employees something to do, and all officers, agents, and conductors are instructed to use every effort to make traveling over the line as inconvenient and unpleasant to the public as possible.

Passenger-trains must be run at least one hour behind schedule time, and as many more hours as is possible. This rule is made for the benefit of trainmen, who have no desire to be on duty less than twenty-four hours at a stretch or to visit their families oftener than once a week.

Agents are prohibited from informing themselves regarding connections with other roads or through rates of fare to points on other lines. When patrons inquire regarding these matters, agents are required to give incorrect information.

Whenever a baggageman is compelled to check a piece of baggage, he must assume a very arrogant air, and must answer all questions in a gruff voice Care must be taken to attach checks to the wrong pieces of baggage. This rule is imperative.

When a passenger calls for baggage, he should be savagely informed that it hasn't arrived Baggage remaining at a station over twelve hours is subject to storage charges, and the company needs the money.

Any conductor detected in giving a pleasant answer to passengers, or any brakeman found guilty of announcing the name of a station in an intelligible manner, will be summarily discharged.

Passengers should familiarize themselves with the following rules:

Patrons wishing to acquaint themselves with the time of the arrival and departure of trains should telephone the agent, who has nothing to do but give this information. Folders may be secured on application, and time-tables are published in most of the papers, but the public is not expected to read them.

A passenger should post himself thoroughly upon the time of departure of trains. This is necessary that he may reach the station not earlier than three minutes before the train leaves, thus giving ample time to the agent to make out his coupon ticket and to the baggageman to check his baggage.

Upon arriving at the depot a passenger should immediately ask the agent again regarding the time of the train's departure. Upon receiving this information, he should inquire if the train is on time. If the agent assures him it is, he should step outside and look up and down the tracks. If he does not see the train, he should return to the ticket-office and ask the agent, in a loud voice, when the train is expected. Under no circumstances should he buy his ticket until the train has arrived and is about to depart, and he has assured himself that the train is actually going to run that day.

Should a train be even five minutes late, passengers should make use of the most violent language in expressing their opinion of the road in the presence of the agent. When a train is late the agent is wholly to blame.

In purchasing tickets patrons should always express surprise at the amount charged, and insist that they purchased a ticket a week previously for three cents less. The agent is only guessing at the rate of fare, as the company never furnishes printed tariffs.

Passengers wishing to get on a train should do so as soon as the train stops. It is a waste of time for them to wait for those on board to get off, as there is more room inside the coaches than there is outside. Also, it makes it much more pleasant for the fat man with the two grips and the frail woman with several children to crowd through a congested aisle in their wild endeavors to disembark.

Passengers accompanied by eight or nine-year-old children should indignantly refuse to pay half fare for them. If a conductor insists upon their doing so, it is evidence that he is trying to rob them for his own selfish gain. Any one ought to know that a four-foot boy isn't five years of age.

On approaching a station the engineer will give one long blast on the whistle, which will be a signal for those intending to get off to rush for the doors. As passenger-trains stop but ten minutes at every station, passengers are warned to disembark in a hurried and disorderly manner to avoid being carried by. If those in front do not show sufficient haste, the ones behind are expected to push them off the platforms.

When, because of a wreck, washout, or some other circumstance, a passenger reaches a junction too late to catch a train on another road, he should not neglect to pay his respects to the conductor of the train that was delayed. The conductor knew what was going to happen, and should have informed the passenger before he boarded the train

"NOW I TAKE THIS QUARTER; SEE IT? I PUT IT IN YOUR HAND AND SHUT UP YOUR FIST, SO."

A VAGARY OF FORTUNE.

BY EMMET F. HARTE.

The Fickleness of the Elusive Goddess as Illustrated in the Case of H. Herndon Ford.

THE afternoon train carried three extra coaches, for wasn't the Stickleburg County Fair going to be the biggest event of the whole picnic season? A full week of riot, it was; season tickets an even dollar and bus fare fifteen cents the round trip.

Once inside the grounds, where the gala crowds surged and eddied by bunting-draped booths, through cereal-festooned Agricultural Hall, and out to the branch-roofed arcade around the band stand where local silver-tongues lurked, you could have your choice; the merry-go-round, starting abruptly in the middle of a tune, discoursed dizzy music interspersed with toots from its shrill whistle; there were booming drums, the blatant cries of hawkers and sideshow ticket-sellers, and, in the proud possession of every child, a red or blue whistle contrivance which emitted, at regular intervals, a long-drawn, whining, nasal note.

Then there were rows of stalls where sleek cattle, shining horses, and hogs of startling obesity submitted to the stares of the passing motley; there was the race-track, where some pretty mile heats occurred from time to time; at two P.M. the Bloomer Girls played nine fast innings with the Stickleburg Sluggers, and at three-thirty the balloon went up

and Mlle. Dizzaza made her thrilling parachute leap.

On Monday evening, as the pallid moon rose in mellow splendor above the eastern horizon, the crowd in attendance at the Stickleburg County Fair was increased by one. Across the path of light from the flaring torches in front of the Bearded Lady's Lair, he sauntered, unattended; into the gaud and glitter he intruded, a lean-jawed, hawk-eyed man, the beak of whose nose indicated settled opinions, audacity, defined purpose, or anything else you wish. Look it up in the dictionary and suit yourself.

How's that? Oh, yes! Beg pardon, his name.

His name was H. Herndon Ford; versatile, resourceful H.; persistent, indomitable Herndon; smooth, suave, convincing Ford; a syllogism of accomplishment was he, artful separator of the plebeian shekel from its cunning possessor; or isn't the child of nature a shrewd proposition on the subject of money? He is; and whoso taketh away from him his well-thumbed nickels had a blamed sight better have filched from him his good name; he would have missed the latter least.

There are buyers and sellers in the barter of Life. H. Herndon was a seller; he could sell anything, from the necessaries of existence, such as Quick and Quiet Corn Cure or Summer Shower Shaving Soap, to fastidious luxuries like Art Pastels, done while you rubbered, or scintillant gems from the diamond fields of central Arkansas.

He could put the neatly folded ten-dollar certificate in the brown pill-box, the neatly folded five-dollar certificate in the white pill-box and, shaking the two together in a small sewing-basket, sell readily, the buyer's choice, for seven-fifty. If the buyer selected the one containing the five, it was his own fault, and no puerile gnawing of conscience troubled H. Herndon

The Stickleburg County Fair was in full blast and the ways from the dense thickets were teeming with the bearers of the ungarnered ducat and obole, hence H. Herndon's presence; but a sad strain will creep into every perfect harmony, so let us drop a tear. H. Herndon was as flat broke as the humble genius who first brought poverty to its highest state of perfection. Only by surreptitiously riding the rods of a way-freight had he obtained a passage to Stickleburg, and only by ignobly sneaking through an unobtrusive hole in the fence had he gained entrance to the grounds.

So, unheralded and quite bereft of pomp and circumstance, he threaded his way amid the throng along the aisles of booths, his face a mask of pleased and childlike interest, behind which lurked the hawk spirit, poised for the swoop. Opportunity tarried not long hidden from such as H. Herndon.

A certain stand-keeper along the row had in his place of business a barrel of lemonade; all day, this man or some of his clerks had plaintively announced the fact in the time-tested words, 'Ice cold lemonade, five a glass.' But the barrel remained brimming, the sliced lemons swam idly around in an environment undisturbed by the inroads of the vender's dipper, and at the flaring of the gasoline torch, ten glasses would have covered the total sales.

H. Herndon paused casually. He didn't inquire, "What will you give me, if I mount this counter here and importune these passers-by to purchase of your delightful beverage?" Instead, he said succinctly:

"I'll sell that barrel of lemo' for you for a dollar."

The stand-keeper was ripe for the plucking.

"Git busy," he said, without a pause between the flash and the report. H. Herndon mounted the pine-board counter with alacrity and displayed his classic profile to the gaze of the idly curious throng.

"Open me a can or two of those blackberries, also of peaches, apricots, and pineapple, one each, and hand me a few of those bananas," he whispered to the nearest clerk, and then the purring music of his voice arrested those in the vicinity.

"Gentlefolk and neighbors," he said, as prelude, "here we are, about to introduce to you a strange, new, delicious drink which originated in the Old World. The cafés of Paris and Vienna, friends, knew it first—where the myriad lights glitter and glow along the boulevards and the gay crowds congregate; then

Venice, the city of the water color, Naples on the sunny bay, Monte Carlo of the fevered madness, and even prim and staid old London, she of the roast beef and the sordid soul, succumbed to the subtle charm of this wondrous beverage.

"This drink of the gods, my friends, which has pleased the palates of the world's connoisseurs, was brought across the Atlantic and introduced to the discriminating Americans; at the beaches, the summer playgrounds, the roof-gardens, and restaurants it became the rage, and at one of these places I secured the formula, friends—I who stand here modestly before you to-night and compound this crystal goblet of the world-famous Parisian Fruit Punch which no one in my presence shall fail to appreciate and enjoy

"See, I take this glass of liquid, mixed from the secret formula, and before your wondering eyes I add the crushed fruit; I stir it, agitate, and assemble the different essential flavors, and behold! I have for your delectation the *ne plus ultra*, the *sine qua non*—the young lady with you wishes a glass, young man; and one for yourself?

"It is ten cents a glass, friends; ten cents for the drink *par excellence*. Thank you; two more and one for the little lad; make room for the ladies, gentlemen; more glasses, boys. Ah, you people know a good thing when you see it; here's your change, sir, and thank you; it costs you ten cents a glass, neighbors, but it's worth it; isn't it, sir? He says it is.

"Don't crowd the children, there, young man; all right, you didn't think; thank you, you'll have another? Pineapple? Three more here. Two for the old people; and—"

In exactly thirty minutes from the first intonation of his voice the sale was consummated. H. Herndon flicked an imaginary speck of dust from his coat sleeve, waved his hand in an elaborate gesture of appreciation and farewell to the assembly massed before him, and descended from the counter. The barrel was empty.

"Here's your dollar," said the booth-keeper, with a grin of approval, "and here's a half extra for fast work. I never saw anything to beat that for lemonade selling. How'd you like to have a job the rest of the week?"

"Thank you," said H. Herndon politely, "but I'm afraid I can't see my way clear. I'll confide in you. But for the fact that I am in somewhat straitened circumstances, I could rake in an amount of money at this fair which would make the receipts of the Standard Oil Company look like the widow's mite.

"I really would like," he purred, with a confidential air, "to impose on your good nature by asking one small favor; let me have one of those empty pasteboard candy boxes there and also give one of your clerks a ten-dollar bill which I would like to have him hold in his hand in view of the crowd while I say a few words. It will take me only a few minutes."

"Sure," said the booth proprietor amicably. "Go right ahead, and welcome."

Again H. Herndon mounted the boards; this time with a paper box in his hand, in which there were sixty small numbered bits of cardboard.

"A game to beguile you, gentlemen," he commenced; "a game of chance, a raffle, a hazard. From this box I hold in my hand you draw a number, and you pay as many cents as the card you select calls for—from one to sixty, gentlemen, and when all are sold we draw a duplicate set from the box and the thirtieth number gets the ten-dollar note this young man holds.

"Ten dollars, gentlemen, and from one to sixty. Your own choice and a chance to win ten dollars for a few cents. Thank you! Forty-four, the young man draws; eighteen; six. Think of it, ten dollars for six cents! Easy money, gentlemen—"

The children of the hay rake and cornfield crowded and jostled with each other in their eagerness to buy chances. It was something new to them to have one chance out of sixty at making ten dollars so easy. Number one went to a perspiring plunger in a suit of clothes bought from a mail-order house, and fifty-nine and sixty were acquired, respectively, by the escorts of two gum-chewing belles amid the plaudits of the crowd.

Many bought two, four, and half a dozen numbers, and by so doing light-

ened the task of making change which was bothering H. Herndon more or less even after the stand-keeper had come to his rescue with every available copper.

"Buy one more, young man," said H. Herndon, when he gave a youngster two nickels and four pennies in change. "I need those coppers badly."

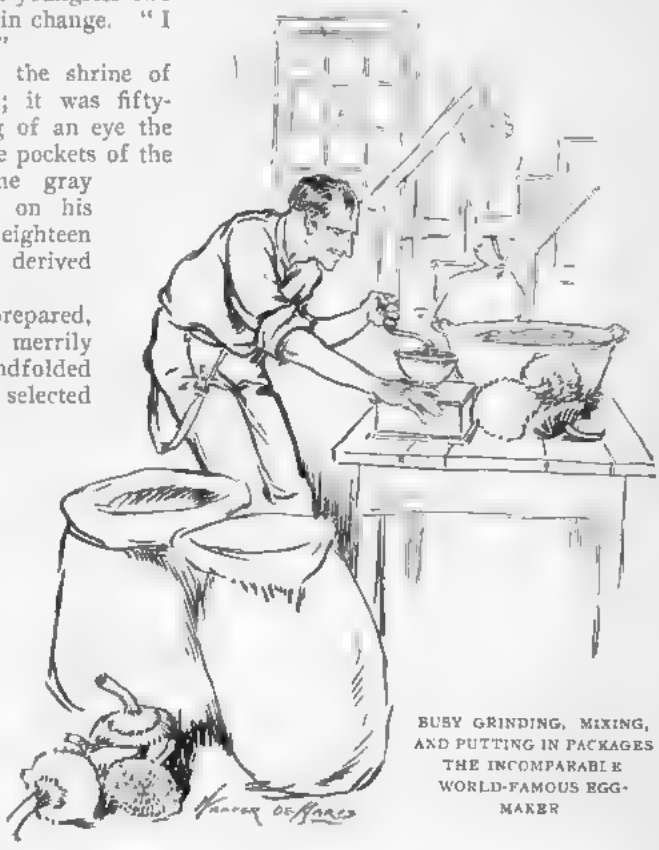
The young devotee at the shrine of Hazard selected another; it was fifty-three. In the twinkling of an eye the box was empty, and in the pockets of the glib gentleman with the gray soft hat set well back on his scheming head were the eighteen dollars and odd cents derived thereby.

The duplicates were prepared, shuffled, and drawn out merrily from the box by a blindfolded boy whom the crowd selected from their midst, and all went smoothly as the climbing of a greased pole. The thirtieth ticket came out in a stir of excitement; it was number forty-one, and the owner of the corresponding chance, an old fellow who drove a rural mail-route wagon during the earlier hours of the day, was awarded the ten-dollar greenback. Everybody was as well satisfied as possible, considering that they didn't win it themselves.

H Herndon counted out ten dollars in halves, quarters, dimes, nickels, and pennies to the stand-keeper, bought a cigar of questionable appearance, shook hands around, and sauntered away. His time had been occupied something less than an hour and he was a little less than ten dollars to the good.

"They're pay-dirt, these people," he mused to himself. "I must hurry up and get it away from them before somebody else does." And he hailed the bus for up town.

Fortune, on occasion, has been known to display an obstinacy that is, to say the least, annoying, while at other times she is so engagingly friendly as to betoken an undue partiality. These whimsicalities of the fickle goddess were well known to H. Herndon. When he wooed her he was prepared for either a coo or a slap in the face as she chanced to deal.



BUSY GRINDING, MIXING, AND PUTTING IN PACKAGES THE INCOMPARABLE WORLD-FAMOUS EGG-MAKER

"A scheme," he pondered as he rode, "a plausible, feasible scheme. These lambs are waiting to be fleeced. The chicken-feed is burning holes in their pockets. Chicken-feed! That's it. I'll sell 'em a poultry food; something to make hens lay. Good!" Aloud, he inquired of his nearest fellow passenger:

"Can I get into a printing-office to-night?"

"I'd hate to say for sure, not knowing," said the inquiree, "but you can get into the saloon; it'sh open all night."

"Thank you, kindly," said H. Herndon, and gave him the cigar he still carried in his pocket. The man cheerfully put the wrong end in his mouth and edged closer for the exchange of confidences.

"HERE IS A SCIENTIFIC FOOD BROUGHT FROM THE FAR-OFF ORIENT."

"I shaw you raffle off that ten-dollar bill," he confided, "an' I don't see how you can do it. That'sh losin' money."

"You are a shrewd fellow," said H. Herndon, with admiration; "I'll show you how you can make some money yourself. Have you got a silver dollar? Good! Here's a five-dollar bill; you hold 'em.

"Now I take this quarter; see it? I put it in your hand and shut up your fist, so. You've got it, haven't you? All right, I'll bet you the five against your one you haven't got it; what do you say?"

"Pshaw! I'll take that," he said. "Sure, I've got it."

"Thank you again," said H. Herndon, as he pocketed the money and alighted. The confiding countryman was staring thoughtfully at a metal disk such as bartenders offer in the interest of custom.

The printing-office was open. H. Herndon entered briskly and opened the conversation.

"I want five thousand labels printed, size four inches by six, on yellow and red paper," he said. "When can I get them?"

"To-morrow noon," said the printer, after some mental gymnastics.

"Won't do," said H. Herndon. "Must have 'em sooner — say, about eight o'clock in the morning."

After more cogitation and calculation the man agreed to furnish two thousand at eight A.M. and the rest by ten o'clock; H. Herndon wrote the copy.

"Now," he said, "if I knew where I could get a room for the night where a little pounding, grinding, and other kinds of uproar wouldn't get me arrested for disturbing the peace of this gentle community, I'd be fixed."

"There's a room up-stairs you can have," said the printer. "It's got a bed in it, but there's no carpet on the floor. You can have it for a quarter if you think you want it."

"The gods love a lucky dog," said H.

Herndon. "I'll pay you right now. Now tell me where's the nearest grocery-store?"

Obtaining the necessary directions, he hied himself to that bazaar of staple commodities and made the following purchases: All their available stock of three-ounce paper bags, six balls of stout twine, four sacks of corn-meal, sundry quantities of red and black pepper, and further distinguished himself by negotiating the loan of a small coffee-grinder and a gunny-sack which he promised to return in good order. After seeing to the delivery of his purchases, he struck out in the bright moonlight, with the sack under his arm, toward the railroad-tracks leading out of town.

H. Herndon had at least one characteristic of genius; he was capable, when the occasion demanded it, of untiring and persistent labor. A night's sleep could be dispensed with enthusiastically when some scheme to corral the wary circulating medium of a rural community was in the hatching. Therefore, when midnight arrived and soon thereafter darkness descended in the wake of the moon's setting, it was not surprising to see him entering the door of his rented room, carrying on his shoulder a well filled gunny-sack which he deposited on the floor.

Contrary to appearances, he had not been on a purloining expedition under cover of the night, either; he had been harvesting the ripened heads of the sunflowers which grew in considerable profusion along the railroad right of way, and his efforts had been rewarded with all he could carry.

Thereafter, until the dawn straggled through the unwashed windows of his lair, H. Herndon was perspiringly busy grinding, mixing, and putting in packages the newly discovered and incomparable World Famous Egg Maker, which would jerk the lazy and unprolific hen out of her lethargy and make her a paying proposition; make her a wealth-producer, gentlemen; a mortgage-lifter; a wage-earner.

He toiled on through the night, and when he slipped down for a bite of breakfast about sunrise, there was a not inconsiderable supply of the World Famous ready to go on the market, lacking only the labels. He cast up a few figures on the margin of an ancient newspaper as he sat in the restaurant

Ingredients, supplies, etc. . . .	$2 75
Room-rent and breakfast	50
Selling privilege at the grounds..	5.00
Drayage.....	1.00
Part payment of printing bill. ..	1 00
Total.....	$10.25

With the exception of some thirty cents or so, this covered his available capital, but he finished his meal and went blithely out in search of the necessary permit. This was obtained without difficulty as he had the cash to pay for it, after which he visited the printer and secured the first lot of labels, paying one dollar on account. Engaging a passing drayman to report with his wagon in half an hour, he reentered the den and put the finishing touches on the first half thousand packages of antidotes to penury.

At seven-thirty, promptly, from an impromptu stage made of a dry-goods box borrowed from the booth-keeper of Fruit Punch fame, the even, dulcet tones of H. Herndon's professional voice struck up their first song of witchery. It was early and the crowd was straggling, but what there were came out of curiosity and, once under his spell, remained.

"Here is a scientific food," he prattled, "brought from the far-off Orient; from China, where the raising of poultry had reached a high state of perfection thousands of years ago. Three thousand years before Columbus set sail, my friends, in his fleet of toy ships, to discover this land of peace, poetry, and plutocracy, the almond-eyed Orientals were doping their hens along the Hoang Ho with this potent mixture and getting from each dozen birds twelve eggs a day, fourscore and four each calendar week, a full case of eggs a month.

"It's no new concoction, gentlemen; no undemonstrated theory or new-fangled experiment. It's time-tried and age-tested, as old as man's inhumanity to man, and as absolute as two plus two equals four.

"Here in this package are the essential constituents of five dozen fresh-laid eggs; on the label of each package, a plain and concise printed guarantee that if used and the yield of eggs be not increased

one hundred per cent, your money will be returned to you without question; a positive and ironclad guarantee, gentlemen. You've nothing to risk, and the price has been placed within the reach of all; twenty-five cents a package, a quarter of a dollar, two bits, my friends, and guaranteed.

"It's backed by the history of the poultry business from remote antiquity; the prize chickens of the Stickleburg Fair are now taking the Egg-Maker along with their daily feed and what is the result? They are shoveling the eggs out of their barracks with a scoop. Thank you, sir. A quarter of a dollar; the gentleman has the exact change.

"One at a time, gentlemen, and remember, it's guaranteed. If your hens do not lay twice the eggs they did before, your money is ready. The directions are on the outside of each package—thank you, sir; here's your change, ma'am, and feed it sparingly; a package should last twelve hens two weeks. Fourteen dozen eggs, neighbors, at twenty cents a dozen, is a good return on a quarter investment—"

In the course of an hour, when the wagons and buggies began to arrive in earnest, the World Famous began to sell more rapidly, and H. Herndon had the comfortable feeling of a growing weight of silver in pockets that had been painfully light. At noon he had closed out the entire lot brought down in the morning, and the demand was still healthy. He hurriedly returned up-town and engaged the room for three more days.

"The first thing," he said to himself, "when an article is safely established on the market and the demand is steady, is for the manufacturer to cheapen the cost of production and thereby increase his profits. I must introduce some new ingredient into the Egg-Maker. Sand! That's the article; sand. It can be bought for a dollar a wagonload."

The afternoon was a whir of strenuosity; he employed the services of two boys to gather sunflowers and grind them, bought a new stock of corn meal and pepper with the addition of a two-bushel sack of sand, and finished up a full thousand packages which he rushed to the fair grounds and sold before sundown. He was so heavy with the resulting burden of silver that it taxed his strength to climb into the bus for town.

Wednesday morning dawned another perfect day, and H. Herndon, refreshed by two hours' sleep, resumed his crusade in the interest of the poultry business, and at noon had disposed of his entire stock of two thousand packages. The Egg-Maker proposition had grown out of even his capable hands.

That afternoon he hired four men, initiated them into the mysteries of manufacture, ordered new materials by the wagonload, and threw away his coat and vest. He did not attempt to visit the grounds, but spent the rest of the day in the furious accumulation of stock for Thursday. Thursday was the big day; the day he would make the final killing, the grand round-up and slaughter of the innocent, clean up and clean out, stow away the proceeds in a fat bill-book, and then catch a train and efface himself like the puff of smoke from an air-gun.

Thursday it was for the shambles, so he set a pace in the mixing and sacking of the Egg-Maker that made his four helpers knock their heads together to follow, but at midnight, when they finished with one last, grand rally, they had four thousand of the World's Famous ready for dispensing.

"I needn't be alarmed about those fellows giving away the secret of the mixture," he thought, as he paid off the exhausted workers. "They'll sleep until two P.M. and be so stiff and sore they'll have to be pried out of bed then."

A light shower fell during the night, allaying the dust nuisance, and when the sun rose in a cloudless sky next morning, the whole county in a body, barring those who were already on the way, hitched up to go to the Stickleburg Fair. By ten o'clock, eight thousand people were in the grounds, and H. Herndon was selling Oriental Egg-Maker so fast he was enveloped in a cloud of steam.

A good many had heard of the famous poultry mixture from their neighbors and the demand needed no spurring. They came, bought, and, running across some of Cousin Emily's folks, told them about it; of course they, too, went right over to the dray whereon H. Herndon stood perspiring and receiving the quarters and got theirs.

"Where can we get more after this is gone?" some asked.

"I'm making this territory regularly, now," he assured them. "I'll be here the first week in every month and supply you; the first week in every month, neighbors; you buy direct from me and save the middleman's profits."

week. I had my kid buy a couple of packages of that chicken feed of yours; it must be all right."

H. Herndon smiled a sad, tired smile.

"I haven't done so fearful bad," he admitted, "and to show you that I think that lemonade of yours is good, I'll pay you for it. Keep the change."

"LEMME HAVE A GLASS OF YOUR PARISIAN FRUIT PUNCH," HE SAID.

"Holy smoke!" he thought, "I'd hate to let them get a chance to mob me when they find out their hens don't lay any better, which they will before the first week in next month."

By four o'clock, the pile of packages had dwindled to a few dozen, and in another half hour he had sold the last and dismissed the drayman. The slaughter was over. He sauntered along the rows of booths, past the Bearded Lady's Lair and over to where his first acquaintance, the stand-keeper, was still dispensing ice-cream, candy, sardines, and soft drinks.

"Lemme have a glass of your Parisian Fruit Punch," he said.

"By George!" said the stand-keeper, "you've certainly done some business this

He deposited a dollar on the pine counter and mingled with the passing tide of people. He had no objective point particularly in view; the last train which left Stickleburg during the night was gone and there was nothing to do but wait until morning and trust to luck and early rising.

"I guess I can get out of town before any of these farmers get in to demand their money back," he thought, "although some of them are pretty early risers. Some of my Tuesday customers will be about due to-morrow morning. However, let us hope for the best."

And he meandered down to the race-track and watched with great interest a quarter heat arranged among some of the lesser lights of turfdom, wherein a one-

eyed sorrel pony was run against a spavined bay in the friskiness of his second colthood. Then, being somewhat aweary of the dust and clatter, he betook himself up-town to the one hostelry of any note that Stickleburg afforded, where he put up for the night.

After a supper, a bath, and a general grooming, and with the knowledge that something like fifteen hundred dollars of his own money reposed in the hotel safe for security, he fell asleep very snugly.

The train left at nine A.M. A few minutes prior thereto, H. Herndon, carrying a jaunty new suit-case, his freshly barbered countenance glowing with good humor, alighted from the hotel conveyance at the depot. In his right inner waistcoat-pocket a bulky bill-book pressed comfortably against his suspender buckle. The rest seemed easy.

A few yards from the station platform however, a country road merged into the intersection of two town streets, and as he rounded the corner of the depot, he saw a long line of teams, drawing wagons and buggies, coming to town. Quite a procession they made, and the first was just turning to pass the depot and cross the track.

"Here's where I had better duck," he thought, "before I meet some of my hot-headed customers who have no sense of humor; especially as the joke's on them."

The train had already whistled; he only needed a couple of minutes, but the occupants of the first wagon had seen and recognized him. It was too late to run.

"Hey there!" called a red-faced man, setting the brake on his wagon and halting the procession. "Hey, mister!" H Herndon was stricken with a sudden deafness, but it didn't suffice; the farmer, seeing that his hail was unnoticed, hastily hopped off his wagon and came in person

"Say, mister," he said, as he approached the now perturbed seller of

"CLIMB UP AND LOOK IN," HE SHOUTED. "SEE! EGGS! BASKETS, BOXES, AND CROCKS OF 'EM!"

sand and sunflower seeds, "come out here a minute; we want to show you some thing. All these people want to see you before you go." And he waved his hand toward the line of teams.

"But—but—" stammered H. Herndon, "my friend, you see I haven't the time; I wish to catch this train."

"Yes, you have," said the man. "Come on; they'll wait for you." And he urged the reluctant and trembling gentleman, suit case and all, toward the wagon.

"Climb up and look in," he shouted. "See! Eggs! Baskets, boxes, and crocks of 'em! Eggs all over the place. That there stuff you sold us is making the hens fight for their turn on the nests.

"Why, I've got thirty-five dozen in that wagon, and Perkins's folks there in the next one have got fifteen or twenty dozen; all these people have brought a passel. We heard as how you're going to be here the first week in next month; is that right?"

By this time, several others had crowded up and driven alongside. H. Herndon drew himself up with easy, nonchalant grace.

"My friends," he said affably, "I'm indeed glad that you're getting such excellent results from the World Famous Oriental Egg-Maker. I knew you would all the time, but of course you had to find it out. I will be here the full week commencing Monday, the third of next month

"You can all get a new supply from me that so desire at that time. Until then, good-by, neighbors, and good luck!" He stepped lightly toward the train.

"Remember, the first week in next month," he called to them from the platform of the coach as the train, starting gently, moved out from Stickleburg.

THE MULTIBILLIONAIRE RAILROADS.

The Wealth of Empire Falls Far Short of the Earnings of American and Canadian Roads.

IT will probably be very many years before agriculture will be superseded as the greatest industry of the United States and Canada, and the more years the better; but it is equally certain that the railroads will always be an easy second to agriculture's first. The Detroit *Free Press* has extracted from the government reports of this country and of Canada figures which show the stupendous business done by the railroads of the two countries

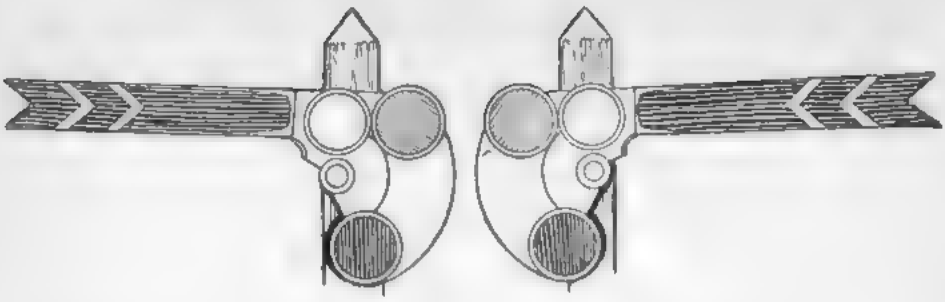
In the matter of receipts, no nation or empire in the world can come within measurable distance of this vast industry. The income of the British Empire, the richest in the world, does not reach one third the amount of the income of the railroads of these two countries.

Seven million dollars a day, or nearly $2,600,000,000 a year, is the nest-egg that the railroads put into their pockets, only, however, to draw it out in expenditures, improvements, wages, dividends, or some other way of sending it circulating broadcast among the money-hungry millions of the world.

Of all the expenditures of the railroads, by far the largest single item is the pay-roll. Every day of the year nearly $3,500,000 are added to this long roll. That is, in two years, the American railroad employees receive in wages thirty times the amount of the gold output of the continent, and five times the gold output of the world.

Of this total of over a billion dollars, shopmen receive the most, their pay-envelopes concealing $210,000,000 every year, while the telegraphers are at the foot of the list with $28,000,000

Of course, all these vast transactions are not carried on in actual currency. Various checks, I. O. U.'s, and commercial papers play prominent parts; for all the mints of the world, working overtime, would hardly be able to supply the railroads of Canada and the United States with sufficient currency to handle a dollar of money for every dollar of business transacted



Recent Railroad Patents.

BY FORREST G. SMITH.

Lifting-Jack to Help in Removing Brasses—How Brake-Shoes May Be Adjusted Automatically—Air Goes on When the Axle Drops—An Anti-Creeper That Is Highly Recommended—Setting Switches from Engine Cab or Motorman's Box—Less Noise on the Elevated—Two Improvements for the Articulated Engine.

TAKING OUT BRASSES.

A Form of Lifting-Jack Which is Claimed to Make the Operation Much Less Difficult.

IN a patent (No. 912,770, February 16, 1909) issued to Harvey T. Andrew, Baring, Missouri, there is shown a novel form of platform for supporting a lifting-jack employed in raising a journal-box to remove or replace a brass. Ordinarily the jack is bolstered up on the ties or road-bed, and when the box is raised, it frequently happens that the corresponding end of the axle, or journal, is also raised, and removal of the brass is thereby rendered more difficult.

Furthermore, much time is often lost in trying to find suitable material for use in bolstering up the jack. In order to overcome these difficulties, Mr. Andrew has devised a jack platform which consists of sides, a bottom upon which the jack is supported, and a transverse wall upon which is formed a foot-piece or projection.

This is adapted to engage with the flange of the car-wheel and support the platform directly upon the wheel, the upper ends of the side walls of the platform engaging with the journal-box supporting frame, and holding the platform steady while it is being used.

The advantage of the device lies not only in the fact that the employment of blocks or the like for bolstering up the jack is avoided, but also that the wheel, and, consequently, the corresponding end of the axle, is held against rising with the box. Therefore, when the box has been sufficiently elevated, the brass may be removed or replaced readily.

FITTING BRAKE-SHOES.

To Make Them Act More Positively upon the Wheels Without Taking the Car Out of Service.

ON electric railways employing air-brake systems, it is necessary at the present time, when the brakes require adjusting so as to act more or less positively upon the wheels, to make the adjustments in the rigging. This requires that the car upon which the brakes are to be adjusted be out of service for a greater or less length of time.

In a patent (No. 912,717, February 16, 1909) issued to Howard M. P. Murphy, Pittsburgh, Pennsylvania, there is disclosed

a novel construction of controlling valve for such a brake system, which may be so adjusted as to gage to a nicety the degree of pressure which the brake shoes will exert upon the wheels. The valve has the appearance of the ordinary ones now in use.

The only way in which it differs from them is in the provision upon the top of its casing of two abutments, which limit the movement of the hand, or controlling lever, of the valve. The supply of air to the brakes is cut off when the valve-lever is in contact with one of the abutments, and is supplied thereto when the lever is against the other abutment.

There is this difference, however, that the two abutments are adjustable independently of each other, so that the lever may have a greater or less range of movement as may be desired. Aside from the advantage presented by overcoming the troubles incident to adjustment of the brake-rigging itself, the device is claimed to have the additional advantage of such an arrangement of the abutments that they may be adjusted by the motorman of the train during a "run," being located upon the top of the valve-casing, and, therefore, readily accessible.

BRAKES AT NEED.

Device for Releasing the Air When a Car Axle Drops Below Its Normal Position.

PATENTS have been granted upon a number of devices intended to provide for the automatic application of the air-brakes of a train upon undue drop of any axle with respect to the body of the car upon which it is mounted. These have been embodied chiefly in means for engagement with the ties or road-bed, acting to open a valve in the air-pipe of the brake system.

Such a mechanism naturally requires to be reset after it has been actuated, and inasmuch as the blow is often a hard one, frequently requires to be replaced, at considerable expense. Daniel N. Bacot and Daniel D. Arden, both of Statesboro, Georgia, have devised and secured a patent (No. 912,932, February 16, 1909) on a device of this character which seems to possess advantages over the previously patented devices in the line mentioned in that it requires no resetting after it has been actuated, and, furthermore, is not subjected to shock such as would cause injury to any of its parts.

In carrying out the invention, a valve is interposed in the air-pipe of the brake system above one forward and one rear axle of each car. To the stem of this valve is connected the upper end of a rod, which at its lower end engages beneath the axle.

A spring acts normally to hold this rod elevated and the valve open, but should the axle drop to an abnormal degree, a pull will be exerted upon the rod sufficient to move the valve to open position and permit the escape of air from the pipe. After the car-wheel has been replaced upon the rails, the spring will automatically return the valve-rod to normal position and reset the device.

HOLD RAILS IN PLACE.

Pennsylvanian's Patent Anti-Creeping Device Said to Be Most Effective Yet Brought Forward.

AS a means for preventing the creeping of rails, there is disclosed in a patent (No. 911,356, February 2, 1909) issued to George S. Zahntser, of New Castle, Pennsylvania, a device which is said to possess the advantage over a number of similar devices of acting to grip the rail and engage the tie more firmly as the tendency toward creeping increases.

The invention is in the form of a casting which is adapted to be placed with its lower end, at one side, against a tie and to receive in a groove formed in its inner face one edge of the base flange of the rail with which it is associated. The casting is disposed diagonally, and the groove is formed or extends horizontally, so that upon creeping of the rail, the corners of the walls of the groove will bite into the base flange of the rail.

As this tendency increases, the corners will bite more firmly and will, consequently, more firmly engage with the rail. In applying the devices, they are disposed upon each side of the rail, and are connected by bolts or other means; they are also arranged one pair upon each side of the tie so that creeping of the rail in either direction will be prevented.

SETTING SWITCHES SAFELY.

An Arrangement of Motors Which the Engineer or Motorman May Operate from the Cab or Car.

OF the many automatic switches which have been devised and patented, there are few which would prove reliable or satisfactory under working conditions, for the reason that they nearly all depend for their

operation upon purely mechanical means, such as abutments upon the engine or car, which engage with trips beside the track. Therefore, they are extremely liable to get out of order after they have been in use for even a few days, owing to the severe impacts to which they are subjected.

Quite a few electrical mechanisms have been proposed, but they, too, have in nearly every instance been almost purely mechanical in their structure; that is to say, they have no means for evenly and positively moving the switch-point to the proper position and holding it there, but move it quickly and with such sudden force as to render rebound of the point likely

In an automatic switch device patent (No. 911,190, February 2, 1909) by Felix Wolf, New York City, there is disclosed what is claimed to be an effective means for overcoming the disadvantages of the prior devices. The device mentioned embodies a threaded shaft mounted across the tracks and passing through suitable bearings carried by the switch-points, a motor being connected with the shaft at each end.

In connection with the motors, there is provided a contact device, or circuit-closer, which is placed between the tracks, and upon the engine or car there is provided a second contact device which may be controlled by the engineer or motorman. By this means the engineer or motorman may operate the circuit-closers between the tracks so as to set in motion either of the motors which act to rotate the shaft

When one of the motors is in motion, the switch-points are moved to main-track position, and when the other is operating they are moved to side-track position so that by observing certain indicating signals the motorman or engineer may readily set the switch to either position desired without leaving car or engine. The true feature of the invention resides in the motors and the threaded shaft by means of which the switch-points are moved comparatively slowly to either position desired, but in a positive manner, means being provided to cut off the supply of current automatically to the motors when the switch-points are snug against the proper rails.

A NOISELESS ELEVATED.

Perhaps Not Quite, but Here is a Device That Is Said to Help Some.

A DECIDED improvement in elevated railway track structure is disclosed in a patent (No. 912,141. February 9, 1909) issued to Clarence L. Lewis, James M. Thomas, and S. C. Jones, Boston, Massachusetts. The invention covered by the patent has as its aim to provide a practically noiseless elevated railway

In carrying out the invention dash-pots are disposed beneath the rails and upon the ties so that the rails will have a slight give, which, while almost imperceptible, is sufficient to insure against the rumble and roar now produced by the travel of trains over railways of this type.

The supporting structure embodied in the invention is claimed to be strong enough to support the rails firmly at all times in proper relative position and against lateral movement, and at the same time to effectually absorb or counteract the vibration which is transmitted to the supporting structure of the trackway by the passage of the trains over it.

ARTICULATED ENGINES.

Samuel Vauclain Improves upon His Own Work, and a Fellow Townsman Makes a Suggestion.

IN a patent (No. 912,023. February 16, 1909) issued to Samuel M. Vauclain, Philadelphia, Pennsylvania, there is shown a novel boiler construction designed for use in articulated locomotive construction. The invention contemplates the construction of a locomotive whose boiler is formed in two sections, connected by a flexible combustion chamber through the medium of which heat is supplied to the boiler tubes of both sections.

The provision of this connecting, flexible combustion chamber permits the two sections of the boiler to have relative movement whereby the engine, though much longer than those now in use, may readily round any ordinary curve. The sections of the articulated locomotive are, of course, coupled by suitable draft-rigging so that no strain is placed upon the flexible combustion chamber.

Another improvement in articulated locomotives is disclosed in a patent (No. 911,305, February 2, 1909) issued to George W Henry, Philadelphia, Pennsylvania. The invention covered by this patent consists in the provision of a valve-controlling mechanism common to both sections of the locomotive so that the valve mechanism of each section may be controlled from the cab of the main section

This control may be had regardless of the position of one section with respect to the other, and consists merely in the provision of jointed connecting rods of simple structure which may be mounted at a very low cost

The Story of Electricity.

BY EARL MAYO.

IN past numbers of this series we have described the various steps by which men have learned how to communicate, by mysterious click and spoken word, along the thrilling wire. Next to speech with his fellows, light is probably the great secondary need of mankind—food, sleep, and warmth being the primary. Yet, despite the long existence of this need, the history of lighting is practically comprised within the lives of many men now living.

Seventy years ago candles were the rule, even in the large cities. A single lifetime has seen our passage through the age of oil, of gas, and into the middle of the glowing era of electricity. There may be other ages of lighting still to come, but it is doubtful if a more potent force than electricity —or some of its variants—will be found as source.

No. 4.—CLIMBING UPWARD TO THE LIGHT.

Steps in the Rapid Progress from the First Crude Electric Lamp to the Present Flaming Arc and Radiant Mercury Tube.

PROPERLY speaking, there are two separate chapters in the history of the electric light. At any rate, there are two main types of light, both in general use, which have developed independently and to a great extent without relation to each other.

One of these is the incandescent lamp which is used chiefly for lighting the interiors of buildings. It consists of a glass bulb enclosing a thin filament, which serves as the vehicle for the illuminating current. The other most familiar form is the arc-lamp, employed largely in outdoor illumination.

In this a current is passed between two pencils of carbon to produce the light. The light is usually placed at a considerable elevation and is employed for the lighting of streets or other extended outdoor spaces. A third type of light, newer than either of these, is that in which vapor enclosed in glass tubes is the conductor of the electric current.

Historically the arc-light is much older than the incandescent, antedating it in public use by more than a generation. On the other hand the incandescent lamp has outdistanced the arc form in the extent of its use. The great demand for incandescent lamps has led within the past few years to the development of a variety of forms, for each of which some special advantage of economy or brilliancy is claimed.

Third in point of time come the vapor or diffused lights. These are products of the twentieth century. They are confined still to specialized uses. It is possible, however, that the development of this style of lamp may make it the most

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CHARLES F. BRUSH DEVISED AN ARC-LAMP FOR STREET LIGHTING WHILE STILL IN THE HIGH SCHOOL.

useful of all forms of electric illumination.

In actual use the arc-light dates from 1844, the incandescent from 1878, and the tube light from 1902. All of them, however, had forerunners, produced in the course of various experiments which preceded them by periods of varying lengths.

Saw the Light Dimly.

A number of early investigators glimpsed the electric light. Otto von Guericke, of Magdeburg, who devised the first frictional machine producing an electric spark, may be said to have taken the initial step toward its practical production. Even before Von Guericke, the observation of Boyle that a certain diamond when rubbed in the dark gave off a luminous glow was recorded

Early in the eighteenth century the Englishman, Hawksbee, devised an experimental light by exhausting the air from a glass cylinder which became luminous when the hand was held against it to produce friction as it revolved. Later, he placed mercury in a cylinder emptied of air and found that when this cylinder was revolved or shaken it became luminous.

In the course of further experiments he enclosed an exhausted cylinder within a larger one containing air. When the outer cylinder was revolved, a luminous glow appeared over the surface of the inner one.

In all these cases mechanical friction on the surface of the glass was employed to produce the electric glow. In 1745 a Polish scientist named Gummert discovered that when a vacuum tube was electrified by being held close to an electrical machine it became luminous.

In 1808 Sir Humphry Davy took a long step in advance by producing an electric light from the current of a galvanic battery containing two thousand cells. For this purpose he used pencils of charcoal, the points of which were placed close to each other with a narrow air space between.

When the current was communicated to the charcoal a brilliant spark was produced between the ends of the two pencils, and as the points were gradually withdrawn from each other to a distance of three or four inches, the light continued, spreading out at its central point, thus forming an arc.

Learning the Way.

This early forerunner of the modern arc-lamp was of vast usefulness in providing a method of producing electric light, but was itself of little practical value, because the soft charcoal was quickly consumed. The size of the battery required to produce a light of any considerable illuminating power made this method impracticable commercially

It gave scientists a lead, however, which they followed up by continuous experiments directed to increasing the

strength and volume of the light produced from battery currents. Many improvements in this form of light production were introduced, both in batteries and in the resisting material employed. The construction of the Grove battery in 1836 and of the Bunsen battery in 1842 gave a more constant current and one of higher power

In 1844 Foucault, a French inventor, employed carbon points to replace those of charcoal, and the greater hardness of this material added much to the lasting power of the light. In the same year this form of light was employed for the first time for public illumination.

This occurred in the Place de la Concorde in Paris, and by the employment of larger carbons and heavier batteries than had been used previously a light was produced much brighter and more penetrating than any that had been seen up to that time. Shortly afterward the brilliant effects of electric illumination were employed in theatrical productions in Paris.

Early Vacuum Experiments.

While the arc-light thus gradually evolved from the initial form devised by Davy, little progress had been made in working out into practical utility the theory of producing a light within a vacuum chamber. It is asserted that as early as 1838 M. Jobard, of Brussels, suggested the feasibility of producing a light by enclosing carbon in a vacuum, and that his experiments were carried forward by his friend, M. de Changy, who actually constructed several forms of incandescent lamps.

According to this story, De Changy was so discouraged by the refusal of the French Academy to permit him to present the results of his labors before it that he dropped the whole matter. In 1841 Frederick de Moleyns patented a device for an electric lamp consisting of a platinum wire enclosed in a glass globe and surrounded by grains of plumbago.

It does not appear, however, that any successful lamp was ever constructed on this plan. In 1844 an American named Starr invented a lamp which embraced the essential principle of incandescent lighting; it consisted of a porcelain rod suspended in a vacuum globe and supporting a small section of graphite held in metal clamps.

The current for the production of light was to be generated by an electromagnetic machine. Starr was a young man living in Cincinnati and his premature death in 1847, before he had reached the age of thirty, prevented him from securing any general recognition for his device.

What Brush Did with the Arc.

The actual development of the incandescent lamp, therefore, in the form in which it has come into almost universal use, awaited the coming of the inventive genius of Thomas A. Edison, which was first applied to this subject in 1878.

The development of the arc-light to a state of high efficiency is inseparably connected with the name of Charles F. Brush. He was born in Euclid, Ohio, in 1849, and while still in the high school in Cleveland he devised an electric arc-lamp for street lighting.

In 1875 he began a series of brilliant electrical experiments which resulted in the invention of the dynamo electric machine and the Brush arc-lamp. While the dynamo electric machine is his most famous achievement, his work in connection with the arc lamp was of vast commercial importance.

In the early arc-lamps it was necessary to have a separate current for each lamp. Brush's system made it possible for a single current to operate a series of lamps, the current passing through each lamp being forced on to others of the series.

The first series of arc-lights was installed in Boston in 1878 and included six lamps, but within two years afterward it became possible to operate forty lights in series. This, of course, rendered the arc-lamp much more economical in operation and made its use commercially feasible.

Brush also effected improvements in the carbons used in these lamps, first by making them out of "still coke" and, second, by copper-plating them, a process which hardened them and increased their lasting power.

The first use of the improved arc-lamps for street-lighting in America occurred in April, 1879, in the city of Cleveland, Ohio. Twelve lights of two thousand candle-power each had been erected in the city square, and on the night when the current was turned into them for the first time a huge throng crowded the square.

Such exaggerated tales of the power of the lights had gained credence that many of those who came to witness the illumination provided themselves with smoked glass, fearing that otherwise they would be blinded by the glare.

Still Following Davy.

The arc-light, notwithstanding the many changes and improvements that have been introduced in the course of its development, utilizes the essential principle followed by Sir Humphry Davy in the production of his first crude light. Instead of deriving the current for the light from batteries, however, it is produced by steam-driven dynamos.

While adequate for the production of the attenuated current required for the telephone and the telegraph, batteries do not yield the high and constant force needed for electric illumination. The mechanism of the Brush lamp, which is the one most commonly in use, consists of two carbon rods, placed one above the other, with their ends close together. The lower of the two carbons is stationary.

As the carbon is consumed gradually under the intense heat when the lamp is in operation, the upper carbon is fed down upon the lower one by the force of gravity, its position being regulated by a coil of wire actuated by the current which feeds the lamp. The current flows through the lamp, passing from the upper to the lower carbon and producing its brilliant arc of light at the point between the two.

The theory is that particles of the carbon, which is raised to an intense heat by the resistance which it offers to the electricity, are carried off in a gaseous state and deposited on the lower carbon. As a consequence, the end of the upper section gradually becomes hollowed into the form of a crater, while the lower one becomes pointed into a cone.

The heat of the lamp reaches the terrific intensity of eight thousand seven hundred degrees Fahrenheit and the brilliancy of its light is about one third that of the sun. Its illuminating power varies according to the strength of the current and the size of the carbons employed.

It was an arc-lamp of this description, exhibited with a circus at Philadelphia in 1878, that attracted the attention of Thomas A. Edison to the problem of electrical illumination. It was shortly after his development of the carbon telephone transmitter that the arc-lamp came under his notice. While this form of electric lighting had advanced to the point of practical operation at this time, the best that could be accomplished with it was to operate fifteen lamps in one series.

This restriction limited its commercial usefulness, a point which at once appealed to the keen mind of Edison. He experimented for a time with the arc lamp, directing his attention particularly to efforts to subdivide the current in order to make it serve a larger number of lamps in a single series. After a short time, however, he turned his attention to the incandescent lamp as offering greater possibilities.

The Wizard Takes a Hand.

As has been related, various experimenters before this time had attempted to produce an electric light within a glass chamber from which the air had been expelled. The essential feature of the Edison lamp was the carbon filament.

The manner in which the inventor was set on the track of this feature and finally perfected it is one of the most interesting stories in the history of invention. As related in the biography of Edison by Francis Arthur Jones, it came about in this way.

The inventor was sitting alone in his laboratory one evening when he picked up a small piece of mixture of lamp black and tar which had been used in his telephone work, and unconsciously began rolling it between thumb and finger. Presently he noticed that he had spun it into a thread.

The thought occurred to him that the

carbon in the mixture might make it available as the filament he was seeking for the vacuum bulb of his proposed lamp. A thread of the mixture was put into a bulb, and when the current was turned on it produced a light

In Search of a Filament.

It was not of sufficient strength to be of practical use, but it indicated the course to be followed. Further experiments showed that the mixture was too brittle, and that on account of its gummy structure the air could not be expelled entirely.

Edison and his assistants thereupon set to work to carbonize other materials. The first substance tried was ordinary thread.

After repeated breakages and continuous work on the part of Edison and his assistants for three days and nights, while failure after failure balked their efforts, a section of the thread was carbonized and placed in the glass bulb without breaking. On connection with the current it yielded a bright light which burned continuously for forty-five hours

THE IDEA FOR THE CARBON FILAMENT CAME TO EDISON WHILE ABSENT MINDEDLY ROLLING A PIECE OF TAR AND LAMP-BLACK BETWEEN HIS FINGERS.

The secret of the incandescent lamp was mastered, but thread was not a suitable material for the filament, on account of the difficulty of handling it without breakage. Thereupon began a search for the proper substance which, the inventor was convinced, must exist somewhere in the world.

Every material, promising or unpromising, that came to hand was carbonized and tested as a vehicle for the light-giving current. The best results were obtained from strips of bamboo taken from a fan, and the work of collecting and testing every kind of bamboo in existence was begun systematically.

Agents were sent to all parts of the world, to South America, Africa, China, India, Japan, and many other places. Representatives of the United States government and private individuals who learned of the search sent in specimens, and hundreds of bales of bamboo accumulated at Menlo Park. A hundred thousand dollars were spent in the work, and six thousand specimens of bamboo and similar substances were tested.

One of the interesting developments of the undertaking was the discovery that through the inventions he had given to the world the name of Edison was known even then in almost every corner of the globe. Ultimately, a fiber native to

Japan was adopted as giving the most satisfactory results.

Edison Takes a Patent.

Meanwhile, as a result of his production of light by the use of carbonized thread, a patent for the lamp which

BAMBOO SUITABLE FOR FILAMENTS WAS AT LAST FOUND IN JAPAN AFTER A LONG SEARCH

bears his name was issued to Edison in January, 1880. While many improvements in the details of this lamp have been made since that time, as is indicated by the fact that one hundred and sixty-nine patents have been issued to Edison for devices connected with electric lights, its general form remains the same as when it was first placed on the market.

It consists of a pear shaped glass bulb, from which the air has been exhausted. Platinum wires lead into the neck of the bulb, fitting into a crosspiece of glass, and uniting with the filament which extends in a loop through the larger part of the bulb

In operation, the incandescent lamp differs from the arc-light in that each lamp taps the feed-wire for the portion of the current which it requires, instead of the current passing through a successive series of lamps, as it does in the arc form. One factor that has had an important influence in increasing the efficiency of the incandescent lamp has been the construction of improved air-pumps, which have made it possible to exhaust the air from the globes more completely.

With the electric light, as has been the case with almost all the Edison inventions, no time was lost in undertaking its commercial development. In October, 1878, the Edison Electric Light Company was organized with a capital of three hundred thousand dollars. From

this beginning has grown a series of companies numbering many hundreds, and representing an investment of hundreds of millions of dollars.

Exact statistics as to the extent of incandescent lighting are not obtainable, but the growth of the industry is indicated by figures of the manufacture of lamps. In 1882 the output of these amounted to about 100,000.

Ten years later the number manufactured annually had grown to 4,000,000, while in 1908 it was estimated that something like 200,000,000 were required to meet the yearly demand.

In 1878, when public announcement was made of the successful completion of the incandescent lamp, following closely upon the perfection of the arc-lamp by Brush, the news was received with the greatest interest throughout America and Europe. It created something of a panic among the holders of gas securities, who feared that their investments would be rendered valueless by the new illuminating agency.

Panic Among the Gas Men.

Particularly in England was this alarm felt, and many investors hastened to dispose of their gas securities at heavy losses. So widespread was this feeling of alarm, that Siemens, himself an inventor of a system of electric lighting, was moved to issue a public statement pointing out the uses and limitations of electricity as an illuminant. In the course of this he said:

> "Although I am strongly of the opinion that electricity will gradually replace gas in many of its most important applications as being both cheaper and more brilliant, I still hold to the opinion . . . . that its application will be limited, at least during the present generation, to such larger purposes as the lighting of our coasts, to naval and military signaling, to harbors, quays, warehouses, and public buildings. . . . . If the gas companies only rightly understood their interests, they would themselves take up electric lighting for those purposes for which it is decidedly preferable."

This advice has been adopted very generally, many gas companies having turned to electric lighting, either as a branch of their former business, or as a substitute for it. The statement of Siemens is chiefly interesting, however, as indicating how frequently those who are most familiar with important inventions fail to realize their full possibilities.

Faults of the Incandescent.

While the Edison light is the one most extensively used, another incandescent lamp, similar in general principles, was invented by Joseph Edward Swann, an Englishman. As early as 1860, Swann devised a carbonized-cardboard filament, packed with powdered charcoal, which he placed in a vacuum globe to produce a light.

His lamp was completed and made commercially practicable in 1880. The principle of the Swann lamp is the same as that of Edison's invention, the main difference being in the structure of the filament employed.

While the incandescent lamp has proved itself one of the most useful of electrical inventions, it has long been recognized as economically wasteful. In the ordinary lamp, only three per cent of the power going into the lamp is utilized as light. The remaining ninety-seven per cent is wasted.

This consideration has led in recent years to many attempts to discover a more efficient substitute for the carbon filament. This has been a difficult matter, for the reason that very few good conductors of electricity have been found capable of withstanding so high a temperature as carbon.

The resisting power of carbon is twenty-six hundred times that of silver, more than four hundred times that of iron, and more than two hundred times that of lead. Certain metals have been found, however, that have this high resisting power, and, at the same time, are equal in efficiency to carbon.

One of these is tantalum, a metal which has been known for more than a century, but which has been obtained in pure form only recently. The process of producing it was worked out by Dr. W. von Bolton, of Berlin.

Unlike the carbon filament, which is

only a few inches long, those of tantalum and other metals are of considerable length, the tantalum-lamp containing two feet of wire. This wire, as used in the lamp, is of such small size that twenty thousand of these filaments can be made from a pound of the metal Tantalum gives a more brilliant light than the carbon filament, but is very fragile.

Tungsten possesses a valuable qualification as a medium for the illuminating current in its high power of resistance to heat. Its fusing point is 3,200 degrees centigrade. The chief difficulty in its employment was found in the fact that it could not be drawn into the fineness of filament.

The method adopted for its use is to take the metal in the form of fine powder, reduce it to a paste, and then force it through a mold. The filament is then dried, the binding material eliminated, and the whole coalesced by the passage of an electrical current

Filaments That Have Been Tried.

This filament is extremely fragile, and must be supported inside the bulb by wire loops set in glass; but it is said to possess three times the efficiency of the carbon filament with the same amount of current

Another recently invented deviation from the ordinary incandescent lamp is the helion, in which a carbon filament coated with silicon is used. The silicon treatment has the effect of raising the fusing point of the filament; that is, its power of resistance to the heat produced by the current, and overcomes the vaporization of carbon, which sometimes blackens the globe of the ordinary lamp

In Europe Dr. Hans Kuzel recently devised a process of treating the various kinds of filament to reduce them to the highest degree of purity, thereby increasing their lasting power. This is known as the Sirius colloid lamp. It affords a means of improving the quality and durability of lights already in existence, rather than involving any departure in the materials employed.

A somewhat similar result has been obtained in the United States by the production of what are known as metalized or graphitized filaments. This improvement resulted from a series of experiments in the laboratory of the General Electric Company. It involves the strengthening and purifying of the carbon filament by treating it in the electrical furnace, and has given increased efficiency in the carbon filament lamp.

Doing Things to the Bulb.

Improvements in the arc-lamp have been introduced in recent years by enclosing the carbons in a nearly air-tight glass globe. The result of this is greatly to prolong the life of the carbons.

Various plans have been adopted also for changing the position of the carbons, in order to do away with the shadow cast directly below the lamp by the lower carbon. Many patents have been issued for lamps with both carbons pointing downward, or arranged at angles to each other

The chief development of the flaming arc, as it is called, has been in Germany These lamps have a higher illuminating power than ordinary arc-lamps, and are operated more cheaply.

An electric lamp of recent invention, which differs somewhat from both the arc and the incandescent types, is called the Nernst lamp, from the name of its inventor. For producing its light it employs what is called the "glower," in which zirconium and yttrium are combined.

The glower is a non-conductor of electricity when cold, but becomes an efficient conductor when heated. Consequently, heat is applied in starting the lamp in operation.

The inventor of the Nernst lamp claims that its light more nearly approaches the quality of sunlight than does that of other lamps, and that the possibility of employing larger units than are used customarily in incandescent lighting enables the lamps to be placed in such positions that their light is more diffused.

These many efforts to construct electric lamps more durable, more economical in the utilization of current, more brilliant, and more nearly approximating the diffused light of the sun, coming

THE FIRST COOPER HEWITT MERCURY VAPOR LAMPS CONSTRUCTED WERE EXHIBITED IN SHOP WINDOWS FOR ADVERTISING PURPOSES.

after a period of a quarter-century, during which comparatively few changes were made, serve as an indication of the vast expansion which has taken place in the use of electric current as an illuminant, and the great dimensions to which the electric lighting industry has grown.

In all probability, the attention and energy that are being directed to this field will result in still further improvements in the direction of lowering the cost of illumination by electricity.

Trials with Tube Lights.

The most radical, and, in many ways, the most interesting of recent developments in the use of electricity as an illuminant, has been in connection with vapor or tube lights. In this field another American inventor, Peter Cooper Hewitt, has achieved results comparable to those of Brush with the arc-light, and Edison with the incandescent.

Unlike most notable inventors, Hewitt was not born to poverty. His grandfather was Peter Cooper, who built the first American locomotive, and whose steady financial support of the ocean cable project enabled Cyrus Field to bridge the Atlantic after repeated attempts.

His father was for many years one of the foremost business men of New York, and served as mayor of the city. Peter Cooper Hewitt received a thorough scientific and technical education, with a view to devoting himself to electrical science.

He was attracted to electric lighting as a field for experiment on account of the wastefulness of the ordinary incandescent lamp, in which only a small percentage of the current used results in the production of light. It will be recalled that one of the earliest manifestations of light produced by electricity was observed in a glass tube, from which the air had been expelled.

In his experiments, which extended over several years preceding 1902, when his light was exhibited in public for the first time, Hewitt tested the possibilities of many kinds of gases in the attempt to find one that could be made incandescent. In the course of these investigations, he began a series of tests with mercury vaporized in glass tubes under the in-

fluence of heat or of a strong current of electricity.

Cooper Hewitt's Mercury Vapor.

Thousands of experiments were performed before any manifestation of light was observed; but, finally, in passing the current into a tube, the young investigator saw flashes of a curious appearance. He found that the mercury vapor was conducting; and the continuation of his tests showed that, after the high resistance of the cold mercury had been overcome, a lessened current was able to pass through it readily, and, in doing so, produced a brilliant, glowing light.

This was the origin of the mercury vapor lamp. Hewitt explained his discovery, and exhibited his lamp at a meeting at the Engineers' Club in New York, in January, 1902. The new light attracted wide-spread attention among the general public as well as among scientists.

The first lamps constructed were exhibited in shop windows for advertising purposes, the presence of the brilliantly gleaming tubes attracting crowds wherever they were displayed.

The feature of economy for which Hewitt was striving was achieved in the mercury vapor lamp. The lamp itself is practically indestructible, there being no filament to be consumed, but only the mercury, which is not decreased in volume by the passage of the electric current. The lamp produces eight times the light of the ordinary incandescent with the same amount of current.

Uses and Drawbacks of It.

The mercury vapor light has come into extensive use since its discovery, particularly in large manufacturing establishments. To some extent it has been used in stimulating plant growth, its cheapness making it available for this purpose.

For the lighting of dwellings or buildings, in which large numbers of persons gather, it has a drawback in the fact that there are no red rays in the light it gives off. The four principal colors of which it is composed are yellow, green, blue, and violet. The absence of red rays causes almost everything seen under the light to present an unnatural appearance, the faces of persons especially assuming a ghastly white aspect.

While the light is not available for use where correct color is needed, it is not unpleasant to work under, since its colors are not those at the end of the spectrum. When the mercury vapor lamp was first exhibited, many persons, unfamiliar with the properties of light, suggested that the lack of red rays could be remedied by using red globes.

As the effect of such globes, however, is to prevent the passage of all except red rays, they would nullify the vapor light, preventing its passage entirely.

Another development of this form of lighting is the Moore tube lighting system, for which it is claimed that when the tubes are fed with pure nitrogen the result approximates sunlight. An advantage of the tube light is its greater diffusion, a result for which electricians have long been striving.

Where Electricity Wins.

Instead of a series of points of brilliant light, it gives the impression of power to see. The tubes afford a steady illumination, and have achieved the goal of a "cool" light, which was one of the objects for which Hewitt was striving. They produce only one-sixth the heat of the ordinary incandescent.

It is asserted that tube lights possess an element of greater safety, as well as greater economy, than the ordinary systems of electric lighting, and they are coming to be used extensively in stores, and, to some extent, in public buildings.

It has been suggested that, by the use of a series of long tubes, streets may be lighted from end to end, giving the effect of daylight, and producing in many places the brilliant illumination characteristic of one portion of Broadway in New York City. Undoubtedly, some method for the production of a diffused light will ultimately be adopted for street lighting, as well as for the interior illumination of many buildings.

While gas still competes with electricity as an illuminant, in spite of the gloomy forebodings of investors in gas stocks when the electric current was first

adapted to this purpose, there are many special uses for which electricity has demonstrated its superiority. In lighthouses, its steadiness and brilliancy have caused it to be adopted, and, for this purpose, the arc-light is employed, the two carbons being placed in a horizontal position and fed forward by a clockwork mechanism, so that the light is kept directly before the center of the reflector.

For lighting the main shafts of mines, for the use of divers in their work, and for submerged lights to indicate channels for ships, electricity possesses obvious advantages. An important field of modern business in which it has come to be employed extensively, is advertising.

The readiness with which incandescent bulbs can be utilized to form the outlines of words and letters has caused electric signs, some of them containing thousands

ELECTRIC LIGHT HAS COME TO BE USED EXTENSIVELY FOR FORCING THE GROWTH OF PLANTS AND FLOWERS IN HOTHOUSES.

of lamps, to be used. Electric light has come to be used extensively also in forcing the growth of plants and flowers in hothouses. By the use of electricity, continuous growth can be kept up.

Reduction in the cost of producing light, such as bids fair to be realized by the vacuum tube lights, will undoubtedly lead to a great expansion in this form of use.

Important sociological results have followed the utilization of electricity for lighting, and, more particularly, the gradual cheapening of electric light. One of these, the benefits of which are unquestioned, although they cannot be measured exactly, is the lessening of crime, due to the better lighting of cities and towns.

Electric lighting has added greatly to the extent and efficiency of the work accomplished in those industries which must be carried on during the hours of night. Its influence in enabling the world to accomplish more work, and to work under better conditions, makes it an agency of the utmost practical importance to mankind.

The mysterious fluid that plays so important a part in modern life is being made to carry the burdens, as well as do the lighter tasks of the world. The next article in this series will deal with the application of electricity to the problems of transportation.

SHORT WAY TO THE OLD WORLD.

Canada's New Road to Hudson Bay Is Being Rushed and Will Be Completed in Two Years.

IT is reported that the Canadian government is making all haste with the railroad that will carry the grain output of the Canadian West up to Hudson Bay for shipment to Europe. The road has reached Pasmission, four hundred and eighty-eight miles from Churchill, and it is believed that the entire road will be thrown open in two years.

The Department of Commerce and Labor publishes figures showing the advantages of this route, as follows:

From	To Montreal. Miles.	To Churchill. Miles.	Per Cent Saved
Battleford	1,994	876	56
Brandon	1,555	940	39.5
Calgary	2,262	1,256	44.5
Edmonton	2,247	1,120	49.7
Prince Albert	1,958	717	63.4
Regina	1,788	774	56.5
Saskatoon	1,924	806	58.1
Winnipeg	1,422	945	33.5

The saving in freight charges varies from 15.8 per cent for Winnipeg to 54.4 per cent for Battleford.

The total grain crop of the Canadian West for 1908 is estimated at 235,000,000 bushels, and the value about $80,000,000. The transportation cost to present ports is about $30,000,000.

The development of seaports on Hudson Bay means much to the railroads of lower Canada and to roads in the United States as well

TRAILING THE "JOSEPHINE."

BY WILLIAM WALLACE COOK,

Author of "Running the Signal," "The Paymaster's Special," "A Desert Argonaut," Etc.

Wherein a Young Man Finds a Good Opening in a Time of Great Need.

CHAPTER XVI.

The Water-Hole

FROM rising ground, ten miles beyond the notch, Rafferty and I checked our horses and looked off over the dusty gray flats to a patch of emerald, all of an hour's ride away. "There's the water-hole," announced Rafferty.

"And the sun is no more than half an hour high," I added, with a look to the west.

"How far beyond the water hole are we to go?"

"Do you know the Rocking Stone?"

"I've heard of it," said Rafferty, "but I've never thought it worth while to go and see."

"It's not much of a spectacle," I went on, "and not one man goes there in a blue moon. Prospectors keep away because there's no mineral formation That's where we're going," I added

"Can't you find your way to it at night, Jordan?"

"I might, at the risk of a broken neck. It's an up-and-down trail, and hard enough to follow in broad day."

"If Charley Phipps can get there in a buckboard—"

"He can't!" said I, and spurred Nugget toward the flats.

"There's something white at the water-hole," observed Rafferty, galloping alongside. "It looks like a tent to me."

I drew rein again, and pulled down my hat-brim to shade my eyes. Rafferty was right. There was a tent at the water hole. It was *my* tent, and my heart leaped with the thought that it harbored the "Josephine" expedition. Unable to reach the end of the route in the wagon, Charley had been obliged to turn back. On this I had built my hopes for keeping Sheiba and her aunt away from that clash with Gollinger.

"If Charley and the ladies are camped at the water-hole, Rafferty," said I, "say nothing about our plans. Leave everything to me."

The sun had dropped behind the hills, and night had fallen as suddenly as it always does in those latitudes, when Rafferty and I galloped up to the fire where Charley and Sheiba were busily getting supper.

"Why, Mr. Jordan!" exclaimed Sheiba, looking up from a sizzling skillet as though she had never expected to see me again

"Bert, by hokey!" cried Charley Phipps, dropping the fuel he was about to put on the fire and stepping up to shake hands with me. "Brought him along, did you, Jack?"

"It was the other way round," Rafferty answered, swinging out of his saddle, doffing his hat to Sheiba, and leading his horse toward the water-hole

"Why did you run away from me?" I asked, smiling at the girl

"Well, we didn't gain anything," said she. "The buckboard can't take us where we want to go, so Mr. Phipps brought us back here. Too bad," she commiserated, "that you had to be both ered with that hand-bag.

"Colonel Struthers tried to get the conductor to stop the train, but he said we were late and he couldn't think of it. The next passenger train wasn't to reach Bowie till noon. Surely, you and Mr. Rafferty haven't come this far since then?"

I explained about the freight, but kept the Colonel Struthers business to myself. Nor did I say anything about the location notice Rafferty and I had found in Cy Heck's pocket. My heart ached for the girl. Gollinger had been beforehand with us, but I still had hopes of foiling him.

"How is Mrs. Mayfield?" I went on.

"She is in that tent, Mr. Jordan, wishing she was back in North Scituate. Really, it is very hard for Aunt Joanna, who is not accustomed to this sort of life."

At that moment the tent flap was brushed aside, and Aunt Joanna appeared.

"Sheiba, dear!" she called, and I detected some of her brother's fretfulness in her voice. "Ask Mr. Phipps if something can't be done to keep away these mosquitoes. They're making life positively unbearable. And that smoke blows into the tent enough to put one's eyes out."

I heard Charley stifle a groan, and the firelight showed a bit of a smile twitching at Sheiba's lips.

"If ye had a leetle more smoke in the tent, mum," called Charley, "ye wouldn't have no skeeters. I dunno what we can do to—"

Just then Aunt Joanna caught sight of me, and I was favored with more attention than that lady had ever deigned to bestow upon me before.

"Dear me, it's Mr. Jordan!" Her voice trembled apprehensively, and she came in my direction, reaching for her lorgnette. I was glad she had left it in the tent, for a pair of gold spectacles on a pearl stick would have struck a discordant note in our surroundings. "Don't—don't tell me, Mr. Jordan, that you failed to find my—my hand-bag!"

I relieved her fears by producing the object and handing it to her; but I had lost all desire to conciliate Aunt Joanna, so I merely bowed as the bag left my hands.

"This is really very kind of you," she condescended, opening the bag to see—I suppose—if the money was all there. "Colonel Struthers told me what an accommodating person you were," she went on, brightening at sight of the money.

I bowed again. The colonel would have had another story to tell if she had interviewed him at that moment. I was afraid I should have to visit a little with Aunt Joanna, but fortunately her fancies took another tack.

"Sheiba, dear," she cried, "the odor of that meat positively makes me ill. Don't give me any for supper. I don't feel as though I could eat a thing, anyway." Whereupon, she retired precipitately to the tent with her precious hand-bag.

"Thank—the—Lord!" breathed Charley Phipps. "If that's the way they have 'em down East I don't never want to go. Pleasant travelin'-companion for a dusty road and a jerky buckboard."

I went away with Nugget, took care of him, and strolled back in time for supper. What Sheiba did for Aunt Joanna I don't know. They had their meal together in their quarters.

"What's the game, anyway, Bert?" inquired Charley, as he and I and Rafferty sat by ourselves over our pipes. "The gal has had me squinchin' at landmarks all the way from Bowie. When we struck that place in Wilder's Cañon, where nothin' on wheels could keep right-side up, I thought the gal would bu'st out cryin', he was that disapp'inted. She wanted to unhook the cayuses, an' ride the rest o' the way, but her aunt nearly throwed a fit. Only thing we could do was what we done; and that was, come back here."

I went into the "Josephine" matter at some length for Charley and Rafferty. Charley was credulous, and more than half believed in the mine: but Rafferty took my attitude. Quickly as I could, I brought the subject around to Gollinger.

I told of the rascally work of Gollinger, Taranch, and Turk Murphy in the East, whereby the ancient document concerning the "Josephine" had been stolen; then I followed on down with the treacherous activities of Colonel

Struthers and Leander Meigs, finishing with the gruesome fate of Cy Heck at the Pinnacles, and a word or two about the location notice taken from his pocket.

"If I had known all that, Jordan," said Rafferty, looking at me fixedly, "I'd never have interfered between you and Struthers."

He took the location notice from his pocket, and leaned toward the fire. I caught his hand just in time to save the notice from the flames.

"It ought to be burned," asserted the sheriff, "and you ought to be the last man to keep it out of the fire, Jordan. Gollinger has been a friend of mine, but now I'd sooner have a rattlesnake for a companion. The accident to Heck, and that statement of Buck Myers's, make it possible to get that mine for Miss Rayes. Aren't you going to do it?"

"I am—providing there is any such mine."

"There must be, or Gollinger wouldn't be sending Heck to file a notice."

"We'll proceed on the theory that Gollinger had followed his stolen instructions and found the 'Josephine,'" said I. "Did you bring the blank notices, Charley?"

Charley went to the buckboard, got his coat, and removed a couple of blank notices from his pocket. I filled them out, copying the description contained in Gollinger's notice, leaving the name of the mine the same, but changing the name of the locator to Sheiba Rayes. Then, for an hour or more, we sat thoughtfully over the fire.

This was the place where I, returning from my new strike east of Dos Cabezos, chanced upon Newton Rayes and his daughter weeks before. A good many things had happened since then, and I felt that a good many more were still to happen. For Sheiba's sake, I hoped that the "Josephine" mine was a fact, and that we could get it away from Gollinger; for my own sake, I hoped that Gollinger was still at the mine, and that Rafferty and I would capture him.

"If Miss Rayes and her aunt are asleep, Rafferty," said I finally, "you and I may as well be riding toward the Rocking Stone."

"Whenever you're ready," he returned, getting up.

I arose, dropped Gollinger's location notice into the ironwood embers, and watched it flare up, purge itself with fire, and quiver into brown ashes.

"You're to stay with the ladies, Charley," I continued. "Rafferty and I ought to be back by to-morrow afternoon. In the morning you can tell Miss Rayes where we have gone, and why."

"Ye don't know a thing about how many Gollinger's got with him," fretted Charley, following us as we went for our horses.

"As for that," I answered, "the law is dealing with him now, and he'll be careful what he does."

"We'll get him," said Rafferty, and his mouth hardened.

"You keep yer eyes skinned, that's all," warned Charley. "I got a feelin', Bert, that the's a deeper game back o' all this than what ye think. Don't let the coyote put it over ye any. Ye ort to be sharp enough for that."

I sympathized with Charley for having to stay behind when his fierce desire was to go with us; but Sheiba and Aunt Joanna had to have a protector, and he was the only one who could be spared for the purpose.

Quietly as possible, Rafferty and I rode away from the camp, and laid our course for Wilder's Cañon and the Rocking Stone.

CHAPTER XVII

The Pit and the Stone.

A GREAT stone, as large as a house, hangs upon the very edge of the pit, which stone, resting upon its narrow under surface, is so nicely balanced withal that whenever the wind blows with unusual violence (as is often the case in those bleak lands) the Stone moves to and fro throughout its entire mass, to the profound wonder and astonishment of all who have ever seen it.

In the steep-sided Pit below the Stone opened the mouth of the level of the "Josephine," which mouth, agreeably to treaty with the natives, was closed at the time the Spaniards went away, never more to return to that land of ungrateful heathens; and there, small doubt, said opening endureth to this day, after safely sheltering a Treasure than which all other Treasures in this world are but dross.

Thus ran part of the golden romance which had beguiled Sheiba and her father into their train of troubles. The Rocking Stone I had seen; but the Pit, which I must also have seen, I could not remember with any distinctness.

Prospecting was my trade; and if the country showed no signs of mineral it would have received but little attention from me. Inasmuch as the Rocking Stone was a small wonder, in its way, it had impressed itself on my mind.

This, then, was our objective point; and Rafferty and I fought our way toward it in the night, through Wilder's Cañon. More by chance than because of any skill which we were able to put forward in the dark, we scrambled and climbed and slid over the rough course without breaking any bones or seriously injuring our horses; but our progress was slow, and when we sighted the Rocking Stone it was against the gray dawn of morning.

Rafferty suggested that we leave our horses in a cleft of the rocks, and scout forward. By doing this we would perhaps be able to surprise Gollinger, if he was in the vicinity of the Stone, and avoid a clash which might have serious consequences. Especially would this be advisable if Gollinger was backed by any of the ruffians who were in his pay.

After tying the horses together and securing them safely, we proceeded upward along a small gully, keeping ourselves carefully under the banks, and out of sight from higher ground. Where the upper end of the gully opened out upon the broad plateau that held the Stone, we halted to make a cautious survey of our surroundings.

The Rocking Stone loomed up with all the grotesque magnitude of a church turned upside-down and neatly balanced on its spire. Around it, however, there was not a living soul anywhere to be seen. A dead silence hovered over every part of the plateau.

"He's not here," said Rafferty, heavy disappointment in his voice.

"Perhaps he's in the Pit," I suggested, voicing an exceedingly forlorn hope. "I don't know whether there is a Pit or not, and I never heard of any one running a tunnel into a mine from the side of such a Pit as that paper describes. Nevertheless, those old Spaniards were a queer lot, and it's hard to tell what they'd do. Is that a pile of rocks to the south of the Stone, Rafferty?"

He stared in the direction of my leveled finger. "Yes," he replied.

"A corner monument," said I. "This Pit must open up somewhere to the west of it."

Thinking there was no further need for caution, we climbed briskly out of the gully and hastened across the plateau. At the base of the Stone we halted and leaned back. Before us was the Pit, its edge at our very feet.

"Well!" I mused, taken aback. Strange, I thought, I should not have remembered that odd opening in the earth.

The mouth of the hole was circular, and I judged its diameter roughly at fifty feet. Its depth was no greater than its diameter, and for twenty-five feet downward the walls were smooth and sheer. Below that the walls trended inward, coming to a point and forming a huge inverted cone. The four corners of the claim were laid off on the surface of the plateau and marked with monuments.

"Well!" breathed Rafferty, repeating my exclamation with all the amazement I had thrown into it. "The 'Josephine,'" he added, "looks like a giant well." And he smiled, but not happily.

"The center monument," said I, "is in the point of the cone down there. I can make out the white of the location notice."

"So can I. The point that concerns me, however, is this: that Gollinger has done his work and gone away. Probably, Jordan, we'll have to go to San Simone to catch him."

"If he knows anything about Buck Myers's statement, Rafferty, he will never go to San Simone."

"His business interests—"

"What are business interests, compared with a man's liberty or his life?"

"But it's possible he doesn't know anything about that statement, or the peril he's in. You're only guessing, when it comes to that."

"Well, if we can't catch Gollinger," said I, "I can at least locate this alleged mine for Miss Rayes. For her sake I

hope there's something in it—but can you see any sign of mineral in this plateau?"

He shook his head. "The formations aren't right; but Nature plays a good many tricks, Jordan. I can't see any sign of a tunnel opening off those walls."

"Nor I. It must have been cleverly hidden by the Spaniards when they pulled out. By the same token, where's the old ore-dump?—the circular groove left by the old arrastre?—the ancient paths worn back and forth from the mouth of this Pit by the Navajo slaves and their Spanish overseers? Tell me, too, where they got their water?"

At thought of the lack of evidence, my perplexity grew. Instructions that were entirely accurate pointed the way to the Pit and the Stone, and both were described as by a man with first-hand knowledge; but where was the corroborative detail suggesting that this was an old mine, once vigorously worked?

"The old *dons* hid their tracks mighty well," said Rafferty. "How are you going to get down there, Bert?"

"I'll go for the picket-ropes and splice them together. Wait here, Rafferty."

We could not waste much time on that arid plateau. The horses would have to go dry until we got back to the water-hole again, and we could not prolong their sufferings to the danger point.

Hurrying, as I did, I was half an hour getting the ropes, securing the horses with the looped bridle-reins, and bringing away one of the water canteens. When I got back to the Rocking Stone Rafferty had vanished.

I called his name two or three times without getting any response. Concluding that he had wandered off somewhere to do a little investigating for himself, I began my preparations for descending the side of the Pit.

After splicing the ropes firmly, I planted one of the iron picket-pins into a rock-crevice a couple of feet from the Pit's edge. Then I threw the rope over, removed my coat and hat, and sat down on the brink. Rafferty was still invisible. Where was the need of waiting for him, anyway? I did not need his aid in the work before me.

Deciding that my belt and revolvers would be in the way and hamper my movements, I unbuckled the belt and laid it by the picket-pin; then, taking one of the location notices from my coat-pocket, I thrust it into the breast of my shirt and started down.

The descent was easy, much easier, I knew, than the upward climb would be. When the twenty five feet of sheer wall gave way to the slope, I held myself erect by the hempen cable and walked down to the rock-heap in the point of the cone.

There, in the bottom of the Pit, the air was refreshingly cool. Seating myself on the rocks for a few minutes' rest, I looked upward. The great Rocking Stone reared over me like a threatening mountain of granite.

A thrill shot along my nerves as I realized the comparative slenderness of the surface on which it rested, its dangerous proximity to the edge of the Pit, and the immense bulk which seemed to overhang the void below, where I, like a human ant, was crawling over the rocks.

The next moment I laughed at my unsettling fancies. The Rocking Stone had overhung the Pit from the beginning of Time, and surely it would not lend itself to any prankish tricks while I was in the point of the cone. All the same, I wished Rafferty would show himself at the rim. The sight of a friendly face would have been comforting.

Climbing to the top of the rock pile, where an *ocallila* stake upreared itself, I examined the notice tacked to the board which the stake upheld. The notice was fresh and clean, and, as I had supposed, was a duplicate of the paper taken from the unfortunate Heck.

With my pocket-knife I drew the tacks, storing them in my mouth against the time I should need them. Presently I had removed and destroyed Gollinger's paper and was replacing it with Sheiba's notice, pounding the tacks in with the handle of the knife.

This amounted, practically, to "jumping" Gollinger's claim. There was nothing else to be done, however, if Sheiba's interests were to be protected.

Having finished my work, I closed my knife and slipped it into my pocket. Before climbing back to the rim of the Pit, I thought I would spend a few minutes looking for the mouth of the tunnel.

The rope would help me to mount the incline, and I started for the place where I had dropped the end of it. To my astonishment, the rope was not to be found

I lifted my eyes to the wall, sweeping them around the smooth surface on every side. The rope had completely vanished out of the Pit.

Consternation gripped me as I thought of possible treachery. Could it be that Rafferty was mixed up in this? Latterly I had come to have a good deal of faith in the sheriff. He had talked fair, and—

Suddenly my thoughts flickered into oblivion, and paralysis seized my limbs. I dropped limply down on the rock-pile, my staring, glassy eyes on the rim above. The faces of two kneeling men were clear in the gathering sunlight. One face was Gollinger's, and the other belonged to Taranch.

CHAPTER XVIII.

Murderous Villainy.

NOW and then the acid of despair will etch a scene deeply into the mind. It was so with what I saw from the bottom of the Pit, looking upward toward the Rocking Stone.

Gollinger had a cadaverous face, narrow, implacable eyes, and a lower jaw that was projecting and resolute. There was always a lean and hungry look about him that suggested a starving jackal. His face was swarthy, and his hair black and bristling.

Taranch, on the other hand, had red hair and a blowsy face. One of his eyes had been lost in a powder explosion, and the patch he wore over the cavity did not add to his attractiveness.

While I had busied myself with the location notices, Gollinger and Taranch had pulled up the rope. I suspected that they had been hiding in the vicinity of the Stone all the time Rafferty and I had been on the plateau, and it was reasonable to suppose that they had done something with my companion while I was away getting the picket-ropes. There was a method in all this that puzzled me.

"Hallo, Bert!" called Gollinger, a saturnine smile on his face and a mocking devil in his voice.

Taranch, always Gollinger's echo, repeated the words and added a husky laugh.

"Where's that rope?" I demanded, plunging straight at my difficulty.

"It's up here, Bert," said Gollinger. "This is just the layout I've been figuring on. You knew I was coming here, and I knew that you'd be along. It's surprising, sometimes, how well a carefully laid plan will develop itself."

There was an ominous ring to everything Gollinger said. Every mocking word revealed a relentless purpose.

"Where's Rafferty?" I asked, more by way of drawing Gollinger out than for the purpose of acquiring any real information.

"He's waiting," answered Gollinger. "You see, Bert, he's the sheriff, and we couldn't take him into our confidence. He's friendly toward me, but just how far his friendship would go is a question. The fact that he came here with you sort of tips his hand in a way I don't like. What Rafferty doesn't know won't bother him any—or hurt me."

A brief silence followed. "What's your game, anyhow?" I demanded shortly. "It's your move, Gollinger."

"I'm glad to notice your receptive mood, Bert," Gollinger called down. "Usually, when any one slips the cut on you, you're inclined to become disagreeable. What do you think of the 'Josephine'?"

This required no answer, and I held my tongue.

"It was foolish of you to try to jump the claim," Gollinger went on. "By now my notice is on record."

I could have relieved his mind on that score if I had thought it worth while.

"There's nothing very promising about the prospect, anyhow," he proceeded, "but you never can tell about these old mines. This one was worth locating, if for nothing more than just to get my hands on you. By the way, what have you done with that lying paper of Buck Myers's? I can't find it in the pocket of your coat."

Gollinger's design was slowly manifesting itself. He had learned about Buck Myers and his dying statement, and he knew that the halter or the penitentiary awaited him. If murderous vil

lamy could save him, he would not draw back.

"I've got it down here, Gollinger," said I. "Come and get it."

"It isn't necessary for me to come and get it. You're a careless man, Bert, to carry such a paper around with you, but perhaps your carelessness will save your life.

"I'm going to give you a chance, anyway. If you'll give up that paper, agree to drop this talk about foul play in connection with Joe Parkis, and clear out and leave the 'Josephine' alone, we'll pull you out of that hole and let you go."

"I'll do nothing of the kind!" I yelled, and the temper began to rise in me and shoulder my fears aside.

"I calculated that your obstinate nature would make me some trouble, and I'm prepared to bring you to your senses. You met Struthers and Meigs, didn't you? They held you back in order to give us time to fix things here.

"Make no mistake, Jordan," and his voice rasped with vindictive purpose, "I've too much at stake to let you stand in my way. If ever a man meant business, I do.

"I began planning this in New York, when I heard why you had gone there. Naturally, I didn't know how this end of it could be worked until I got here and looked over the ground; but if the Rocking Stone and the Pit hadn't offered themselves, I had an Apache trick up my sleeve that would have filled the bill.

"You heard my proposition, and your life hangs on your answer. Is it the same you have already given?"

"Yes!" I flung back at him.

"You're young yet, Bert," he wheedled tauntingly, "and I'm not blind to the favor in which you are held by Sheiba Rayes—"

"That will do you, Gollinger!" I cried, and would have given a dozen years of my life to have had him within arm's reach of me. "You were always a contemptible hound, and I've never expected much of you. Still, you can leave Miss Rayes out of this. Your account is with me and not with her"

That touched his temper, as I had hoped it would, and brought him sharply to the business in hand

"We have undermined the edge of the Pit's rim," said he, "and loaded a hole with a couple of sticks of giant-powder. Taranch is about to touch a match to a ten-minute fuse. By tearing out a strip of rock here," he struck his hand on the brink in front of him, "the Rocking Stone will tumble into the Pit.

"You can't get away from it, and your lying statement and yourself will be buried under tons of granite and stay there till the last trump. I can blot you out as completely, Jordan, as though the earth had opened and swallowed you.

"You have ten minutes to think it over. If you change your mind, give me the signal."

He waved a hand to Taranch. The latter bent over and took hold of a long fuse which, up to that moment, had escaped my eyes. I saw the pale glimmer of a match as it was touched to the end of the fuse, then the fuse dropped and writhed snakily, sputtering and throwing off sparks.

My whole body froze with the horror of it. Gollinger's fiendish ingenuity had struck a masterful note. The great Stone, poised over the Pit for countless centuries, would surely be released. Toppling into the Pit, it would crash downward into the inverted point, destroying me instantly. I would be killed and buried at one stroke.

Breaking the thrall that held me, I leaped erect, shook my fists frenziedly at the two above, and cried out useless threats. Why had I left my revolvers at the edge of the Pit? With a weapon in my hands, I could at least have taken Gollinger with me across the Divide.

Ten minutes! Ten minutes to live! No—nine minutes! Eight minutes, now, for the dancing flame was eating fiercely at the fuse!

My hands dropped and my ravings died in my throat. Was there no chance of saving myself? I thought. Could I not climb the smooth slope of the cone and be half-way up the wall when the huge boulder came smashing down?

Sheiba's face floated before me. The one thing in life that urged me to desperate attempts was that vision of the girl. Nothing else in San Simone or Cochise County entered my frantic thoughts. It was Sheiba who gave me

wild strength to fight against what seemed the inevitable.

With a defiant shout I sprang to the slope. The slippery ascent flung me back against the stone-heap, bruised and disheartened. A taunting laugh from Taranch brought me erect again.

A second and a third time I rushed at the ascent, but with no better success than had waited upon my first attempt. Breathless from my wild efforts, I lifted my eyes to the fuse. Half its length had vanished. Five minutes gone! Five seconds could not have passed more swiftly.

Gollinger was standing at the brink of the wall, but Taranch was still kneeling, his face telling how his brutal soul enjoyed my plight.

"Is your answer the same, Jordan?" shouted Gollinger.

If ever a man was tempted to turn his back on duty, to save his life at the expense of what he knew to be right and just, I was tempted then. A compromise with Gollinger would not have altered the situation so far as he was concerned, save that he would have one life the less on his hands.

If I yielded, he was saved; if I did not yield the Rocking Stone would bury me and my proof of his guilt—and he would escape the law. I had everything to gain, except the hell of life with an accusing conscience. I could not face that and think of Sheiba.

Like a trapped rat I continued my scurrying around the point of the cone. I tried to count the seconds that remained to me, as I sweated and climbed and slipped.

A thought clove suddenly through the chaos of my mind a thought swift as a dart of lightning. My pocket knife

Whipping it out, I pried open the heaviest blade. Then, throwing myself flat on the slope, I began wriggling upward, catching the blade into crevices and using the handle cautiously for a support. When I had struggled to the limit the knife allowed me, the resistance of my clothes and the gripping fingers of my left hand held me until I had planted the blade again.

Inch by inch I was ascending! My heart exulted over this straw of hope. Panting and half spent, I paused a moment in my work and looked down. I was ten feet—twelve feet—from the rock-pile

Turning my eyes to the rim, I saw that the fuse had burned close to the wall, and that Taranch and Gollinger were retreating around the rim to avoid the débris of the blast. I saw, also, that Taranch held a revolver. If I escaped the Stone, it was plain that I was not to escape a bullet.

When every second counted there was scant time for rest. It was rather that I feared to lose what I had gained by a loosening of the knife, or a crumbling of the surface beneath me. Shutting my eyes to this risk I gripped the smooth stones with my body, withdrew the knife and reached it upward.

Then I felt myself beginning to slip Frantically I drove the point of the blade downward. The steel met resistance, but the resistance gave way abruptly and the knife plunged to the hilt in softer ground.

I had no time to think what this might mean. The fact itself sufficed me, and I drew myself up. Again and again I buried the blade, mounting a foot at a time.

Then, with the sheer slope of the wall still many feet beyond me, the clattering roar of the blast echoed deafeningly. The Pit boomed and roared, and amid the pattering débris that hailed upon the walls arose a fierce yell.

After that a death like silence, lasting a second or two, but seeming to me like eternity. A rending as of splintered rock whispered softly, grew into a rasping murmur and then into a shriek. A jar followed that shook the Pit like an earthquake

The ground under me gave way and I fell into blackness; another instant and my ears were deafened as by a broadside of cannon, the earth heaved under my bruised limbs, and night closed in.

CHAPTER XIX.

The Writing on the Wall.

I AWOKE as from a feverish trance. I was alive—and this alone seemed sufficiently incredible. Not only was I alive, but I was practically unhurt.

These discoveries bewildered my already greatly disturbed mind.

What had gone amiss with Gollinger's murderous plan? It did not seem possible that I had been far enough up the slope to escape the descending Stone. And yet, there was I, uninjured after that terrific ordeal.

Sitting up on the hard earth, I stared about me. A ragged opening, above my head, let in a patch of daylight. I got up, stood on a heap of earth and stones, and looked out. My position gave me a view of the rim on which the Rocking Stone had been perched.

The Stone was gone, and the course of its fall could be plainly traced on the deeply scarred wall. My gaze dropped downward until it rested on the huge monolith wedged into the bottom of the cone.

A sickening sensation swept through me as I realized that nothing less than a miracle had kept me from being buried under that mass of granite. But what kind of a miracle? My mind was working slowly, and I was in doubt.

My impressions, just previous to the fall of the Stone, were so obscure as hardly to be recalled. I thought of the way my knife had gone into the slope, however, and of the jar which had let me through the apparently solid ground.

Turning from the hole, I saw that I was in a passage high enough to enable me to stand upright with plenty of headroom. It resembled the tunnel of a mine.

Then the truth flashed over me. The "Josephine!" Chance had directed me up the slope to the mouth of the tunnel, and I had fallen into the mine and saved myself from the rushing Stone.

Staggering against the wall of the passage, I leaned there with my face in my trembling hands. I had escaped, and by a margin so narrow that the mere thought of it unnerved me.

When I had recovered a little I took another look through the opening to see if I could discover any signs of my enemies. So far as I could make out, there was no one on the rim of the Pit.

What had become of Gollinger and Taranch? Had they fled from the scene thinking that the fall of the Stone had spelled my doom?

They had taken the sheriff away, I supposed, so he would not witness the culmination of the murderous plot. What a representative of the law cannot see, he cannot swear to. Gollinger had attended carefully to the details of his plan.

Leaving the question of how I was to be rescued from the Pit to be answered later, I pushed along the passage. Fortunately, my match-case was in the pocket of my trousers, and I lighted my way as I proceeded.

The tunnel had been dug through conglomerate and showed absolutely no trace of mineral formation. To my surprise, fifteen feet carried me out of the tunnel and into a subterranean chamber. The passage did not run through the chamber, but ended at the chamber wall. This was the cap-sheaf. Was there no more to the "Josephine" mine than a fifteen-foot tunnel and an underground room? The room was about ten feet square by as many high, with not a suggestion in walls, roof, or floor of an ore vein.

I passed around the rectangular apartment, striking matches and hoping against hope that I should find something to throw light on the mystery. My search was successful, but disappointing and astounding as well.

A small niche had been hollowed out of one wall, some five feet from the floor. In the niche stood a bronze crucifix.

While I stared at the image, passing a lighted match back and forth in front of it, my glance encountered a flat stone on which some written words had been scratched with a sharp instrument. Closer inspection revealed that the writing had been done in Spanish, and I translated it thus:

> Here, by the grace of God, Padre Ignacio and seven others, escorting Señorita Josephina Otermin, daughter of his excellency the governor, took refuge from the hostile savages who revolted against the authority of his most Christian majesty on San Lorenzo Day, 1684. *Paritur pax bello—pax vobiscum.*

So, ran my startled thoughts, this was a refuge for a party of Spanish fugitives, and not an ancient mine! The

"treasure" of the veracious friar, author of the message which had traveled such a devious course to the hands of Sheiba and her father, was the Señorita Josephina, daughter of Governor Otermin!

While I stood there in the darkness, taxing my brain for further light on this most extraordinary affair, I was startled by a voice calling my name. It was a woman's voice and, unless I was greatly mistaken, Sheiba's.

"Here!" I called, stumbling back along the passage.

From the opening I saw the girl. She was standing on top of the Stone, the end of the spliced picket-ropes encircling her body under the arms. The cable trailed upward over the rim of the Pit, where I saw Charley kneeling and staring downward with apprehensive interest.

"Are—are you really alive, Mr. Jordan?" gasped the girl.

Our surprise at seeing each other was mutual. "Yes, Miss Rayes," said I, "but I had a close call of it. What led you to believe that I was down here?"

"Mr. Rafferty and Mr. Phipps decided that between them. I—I—" Her face was like death, and she dropped limply down on the Stone.

I climbed through the opening, slid to the top of the Stone and gained her side. My appearance was the signal for a joyful shout from Charley, but I could not give him any attention just then.

"Are you ill, Miss Rayes?" I asked anxiously, kneeling in front of her.

"I'm all right, now," she answered. "We didn't know what had become of you, and Gollinger wouldn't say a word. Then, too, we heard the explosion, and the fall of the Stone—and—and feared the worst. The 'Josephine' mine isn't worth the sacrifice of a single life, Mr. Jordan!"

"Gollinger?" I repeated. "Have you seen him?"

"He was struck by a piece of flying rock, and his leg was broken. Mr. Rafferty found him, and is now trying to capture Taranch." She clasped her hands convulsively. "It—it is terrible to have our work end like this!"

I could have shouted at what she told me about Gollinger. His engine of destruction had injured him more than it had me

"But you knew, Miss Rayes," said I, "that I was coming here to capture Gollinger."

"Yes," she breathed, "but I had hoped there would be no trouble. Mr. Phipps explained everything to us this morning"

"Why did you come on here?"

"Because I thought it was my duty. We rode the horses, Aunt Joanna and I, and Mr. Phipps walked. When we came to the place where you had left your horses, we found Mr. Rafferty. He was all tied around with ropes, and we heard him shouting from a cranny in the rocks, a little way off. After that came the—the explosion." The girl shuddered. "Mr. Rafferty felt sure that you had been killed."

"Gollinger's intentions were sincere enough," said I, "but they didn't pan out. You must have made a quick trip up Wilder's Cañon to get here so soon."

"We started early, long before sunrise. I would not wait for breakfast, nor for anything else, after I found where you had gone."

"Couldn't you trust me to locate the mine for you?"

She flashed her blue eyes into my face. "It wasn't that," she answered.

"Then—"

"Please help me up," she interrupted, extending her hands.

Her hands trembled in mine. "This has been altogether too much for you, Miss Rayes," said I. "The ride through the cañon, the condition of Gollinger, the trouble with Taranch, and this descent into the Pit— Why did you do *that?*" I broke off reprovingly. "Charley could have come down here."

"I wanted to come myself," she returned, with an air of finality, "and I am glad I did. Something terrible must have happened here, and we know next to nothing. What was it?"

The account was hardly for ears like hers, but I sketched events briefly and glossed over the most trying parts of my own ordeal. She listened breathlessly.

"Mr. Jordan!" she exclaimed, "your experience must have been frightful! And you are not hurt at all?"

"Not at all!"

"And that," she went on, excitement in her voice as her eyes swerved to the opening in the slope, "is the entrance to the 'Josephine' mine."

"It is the entrance to what that old document led you to believe was a mine," I parried.

She whirled on me. "But isn't it?" she demanded.

A grevious disappointment was in store for Sheiba, and it was hard that I should be the one that brought it home to her. She and her father had built up their dreams on the unsubstantial foundation of that old document, they had endured grievous hardships in trailing the supposedly lost mine, and now to have their hopes shattered at a blow seemed an irony of fate.

"If you wish," said I, "we will go into the place and look it over. A personal examination will be more satisfactory than anything I can tell you."

Without a word she loosened the rope and lifted it over her shoulders, then I helped her to the ragged opening and lowered her to the floor of the passage. I was about to follow when a yell from Charley drew my attention.

"Bert! Why the nation can't ye say somethin' to a feller? Here I been whoopin' till I'm black in the face, and ye ain't paid no more attention than as if I wasn't within a thousand miles o' ye. Are ye hurt?"

"I'm all right, Charley," I called back.

"Is that there hole the tunnel o' the 'Josephine' mine?"

"I'll tell you all about it when I come up."

"Well, I got to stay here and watch this rope. Rafferty is chasin' Taranch, and I'm all alone with Gollinger and Mrs. Mayfield, and Mrs. Mayfield is scart purty nigh to death. I'll be one happy man when we're done with all this business."

I could imagine what sort of a time Charley had been having with Aunt Joanna. The hardships that lady must have endured coming up Wilder's Cañon, and the wrenching her nerves must have had during the exciting events that followed, awoke a feeling of sympathy in even my own calloused heart. But, at that moment, I had more sympathy for Sheiba than for any one else.

Lowering myself into the ragged opening I dropped to the girl's side.

"Have you examined the place, Mr. Jordan?" she asked, with enforced calmness.

"Yes."

"Then please explain everything to me. I have a right"—her voice trembled a little—"to know the best or the worst."

Lighting our way with matches I led her through the short tunnel and into the chamber.

CHAPTER XX.

The Treasure of the "Josephine"

WITHOUT speaking I conducted Sheiba to the niche containing the crucifix. A sharp breath of astonishment escaped her as she looked at the image. Next I directed her attention to the writing on the Stone.

I knew that she could read Spanish, for she had translated from the original the duplicate copy of the friar's instructions—the copy we had used in our flight after Gollinger.

"Then," she cried, turning from the writing to me, "this is no mine at all, but was simply a place of refuge for a party of Spaniards fleeing from the Indians?"

"I am sorry, for your sake," I answered feelingly, "but I never had much confidence in the 'Josephine,' as a mine. It is surprising that we found even a place like this."

"You are a prospector, Mr. Jordan," she went on, probing mechanically to the very bottom of the affair, "and you can tell, I suppose, merely by looking at a range of hills, whether it contains minerals or not?"

"That is the a, b, c of prospecting, Miss Rayes. The formations are not right here."

"There is absolutely no sign of gold in the tunnel, or in this chamber?

"Absolutely no sign!"

"But I can't understand," she murmured distractedly, lifting one hand to her temples, "why the friar's story should fall so far short of the reality. The Navajos worked in the 'Josephine' as slaves, he labored among them—"

"Fact and fable become inextricably

mixed in the stories of these lost mines," I said gently, for I could see the girl was sorely tried. "There is a slight foundation, I suppose, for nearly all the stories, but in handing them down they become so warped and twisted that it is impossible to get at the grain of truth.

"I believe that writing on the wall, and I believe that the 'treasure' of the poetical friar was the Señorita Josephina Otermin, daughter of the governor. Here she was sheltered, and here her life was saved from the murderous savages—"

With a sob, Sheiba dropped to her knees and buried her face in her hands

"My poor father!" she murmured brokenly.

The match fell from my fingers, and there, in the gloom, I stepped to her side and laid my hand tenderly on her bowed head.

"Sheiba," said I, "what greater treasure is there in this world than a fair, faithful woman? And where is the mountain of pure gold which can outweigh such a woman's love? The trail of the 'Josephine' has led you to disappointment, but it has led me to riches uncounted if—if—"

The telling was not so easy as I had thought it would be. My tongue stumbled, not because it had so few words, but so many.

"Sheiba," I went on, "I have loved you from the night we left the life-saving station and fought our way to the cottage through the November gale. I am not a rich man, but I have enough to make your father comfortable for the rest of his days, and to let you finish your studies abroad. Am I to find a treasure here on the scene of your—"

"Oh, let us go, Mr. Jordan," she cried tearfully, starting up.

"Just one word, Sheiba!" I implored, clasping her hand.

"I can't think! I can't answer you now! Give me a little time—please!"

She tried to draw away from me, toward the tunnel. "Until we get to San Simone?" I begged. "You will tell me at San Simone?"

"Yes, yes—but let us go now! I do not want to stay another moment in this place."

She fluttered away while I was striking my matches, and was clear of the opening and waiting for me on the Stone when I finally climbed out of the passage

Her face was flushed, and her eyes were bright and dancing. Although she did not look at me as I slipped down the descent to her side, I made the most of my opportunities for looking at her.

Where was her regret for the disappointing revelation made by the "Josephine"? I had never thought her capricious, but her mood puzzled me.

"Help me, please!" said she as she picked up the noosed rope

I looked carefully to the knot before I placed it over her shoulders.

"How much is the mine worth?" some one bawled down from above.

It was Rafferty. He and Charley were standing side by side on the rim of the Pit

"Miss Rayes will tell you," I called back. "As for me," I added to Sheiba, "I won't know until we reach San Simone."

She ignored my words demurely. "Be careful, up there," I called to Charley and Rafferty. "All ready!"

I watched anxiously as she swung aloft, and did not breathe freely until I saw her lifted over the edge. Presently the rope came down again, and I placed one foot in the noose and was hand-over handed by Charley and Rafferty to the surface.

There I found Aunt Joanna, tearfully entwined in Sheiba's arms, also Gollinger, crippled and helpless, but resigned.

"You had one chance in a thousand, Bert," said he, with an evil laugh.

"You haven't one in a million," I answered. "Where's Taranch, Rafferty?" I added facing the sheriff.

"He got clear," replied Rafferty, "but I kept him from taking Gollinger along."

The hosses are bad off for water, Bert," said Charley, coiling up the ropes. "The's four mounts and six of us to ride. Hurry up and make some kind of arrangements so we can git started."

"Gollinger will have to have a horse to himself," spoke up Rafferty, "and the trip isn't going to be any too easy for him at that."

"Miss Rayes will ride behind me on Nugget," said I, "and Mrs. Mayfield

will ride with you, Charley. That will leave Rafferty free to look after Gollinger."

Charley looked depressed. "Ye know, Bert," he returned, "there ain't no saddles fer the buckboard cayuses, an' it wouldn't be very comfortable fer Mrs. Mayfield ridin' with me like that. Now, I can look after Gollinger and Rafferty can take Mrs. Mayfield up behind him. Hey? How's that?"

"I never *imagined* what I'd have to go through," wailed Aunt Joanna, "or I should never have stirred a step from home to come here. Sheiba, dear, the very thought of riding back through that dreadful cañon makes me feel faint."

"I will take care of you, Mrs. Mayfield," said Rafferty gallantly.

The manner of our return to the water-hole having been thus arranged, Charley and Rafferty made haste to get the horses. The most difficult problem was the transportation of Gollinger. It was inevitable that his broken leg should give him much discomfort, but we made him as easy as we could.

As we trailed off down the cañon, Sheiba's soft arms about my shoulders inspired a feeling of contentment and happiness which augured well for what I was to hear in San Simone. Owing to the difficulties of the trail, and the fact that Rafferty, Charley, and I had each some one to look after, there was little talking on the way to the water-hole.

We reached the camp early in the afternoon, and found everything just as Charley had left it that morning. Owing to the fact that Aunt Joanna was in a state of collapse, I deemed it best to call a halt at the water-hole until the following morning, thus giving her time to recover her strength and get control of her nerves.

That night, over our pipes, Charley, Rafferty, and I got at past events from every angle.

Rafferty told how, when I had left for the picket-ropes, he had been caught from behind and borne to the ground by Taranch. Gollinger helped in the tying, and the two of them carried him off to the cranny where they had laid in hiding while he and I had been reconnoitering the Pit.

Hearing the approach of Charley and the ladies, Rafferty had used his voice lustily, and had apprised them of his whereabouts. The explosion and the roar and shock of the falling Stone had carried the sheriff back to the Pit in advance of Charley and the ladies. There he had found Taranch with his horse and Gollinger's, doing his utmost to get the injured Gollinger in the saddle.

The coming of the sheriff caused Taranch to whirl and make his escape, taking both horses with him. Rafferty had given pursuit, but Taranch had evaded him among the bleak uplifts.

Charley dwelt most on the journey he had had through Wilder's Cañon with Sheiba and Aunt Joanna. Sheiba, he said, was determined to follow Rafferty and me to the Rocking Stone, and her aunt was equally determined that they should all remain at the water-hole. In the end, the stronger will had its way, and Aunt Joanna, rather than remain alone at the water-hole, was compelled to ride one of the buckboard cayuses.

"And then," said Charley, "when we got to that there big hole in the ground, Miss Rayes was more determined than what she had been at the water-hole. She opined ye was done up, Bert, and was somewheres down in that Pit. 'Course I had to stay up on the surface an' look arter Gollinger and Aunt Joanna, and I thought the gal ort to wait till Rafferty come back and let him go down in the Pit and investigate.

"But she wouldn't have it that way. Grit? You take it from me, *compadres,* that gal has got more grit than ten ordinary *moharries.* She's a brick, she is."

"And that 'Josephine' proposition," observed Rafferty, "hasn't a trace of 'color' in it. Gollinger was fooled as bad as anybody, and I'm plenty sorry for the girl."

"What can we do with Gollinger, Jack?" inquired Charley.

Rafferty waved his hand westward. "Yuma," he answered sententiously.

"Sure of it?"

"Not the least doubt in the world! There'll be a sensation in Cochise County, but it won't affect the result. Go on, Jordan," he added, turning to me, "and tell us about the Pit and the Stone."

"Excuse me a minute," said I.

Sheiba had fluttered out of the tent

and started for the wagon. I joined her, and we walked through the evening shadows.

"Aunt Joanna has a folding cup which she wants me to get," said Sheiba. "She always takes it with her, when she travels, and she always mislays it."

"Sheiba," I returned, ignoring the cup and Aunt Joanna and her troubles, "I can't begin to tell you how impatient I am. Why wait till we get back to the home camp? Tell me now!"

"What shall I tell you, Bert?" she asked softly, her head drooping a little as she stood before me. "Shall I tell you that I, also, have found a greater treasure at the 'Josephine' than I had hoped for, and that I also have loved you since that night of danger on the coast?"

"Can you tell me that?" I whispered, leaning toward her. "Will you tell me that?"

"I can, dear heart," she answered, lifting her face and giving me a full look with her blue eyes, "and I do!"

"Sheiba!" I exclaimed, clasping her in my arms, "my Lady of San Simone!"

(The End.)

REAL METROPOLITAN TRACTION.

Public Service Commission Shows Marvelous Travel Figures for Old Peter Minuit's Bargain-Counter Island.

IF romance can exist in figures, it is in those presented by the Public Service Commission for the first district of New York. The commission reports that the car lines of the city—the Surface, Elevated, and Subway—carry annually over 1,300,000,000 passengers, which is sixty-six per cent more than the passengers carried by all the combined steam-railroads of the entire country.

Less than three hundred years ago the island, which is the solar plexus of this mighty living thing, was bought from the Indians by Peter Minuit, the first Dutch governor-general, for barter of the value of twenty-five dollars. The car lines covered in the report have a capitalization of over $533,000,000, and derive an income of $62,000,000 for their services to the inhabitants of the greater city.

The old proverb says that there is nothing new under the sun, but to state that never in the history of the world was there anything to compare with this change of values is to state a fact so obvious as to render the statement of it absurd.

The ground value alone of Manhattan Island is now about $2,500,000,000. The gas and electric companies, which are also covered by the commission's report, have a total capitalization of $386,000,000, and 32,000,000,000 feet of gas are sold annually—more than twenty per cent of the entire output of the United States. The income from the sale of electricity is $20,000,000 a year.

Men Who Have Made Travel Safe.

BY C. F. CARTER.

IN railroad history, as in other mundane affairs, it is not always the men who have talked, or been talked about, the most, who have accomplished the greatest good for the causes they espoused. How many people who read this article have ever heard of Father Coffin? As a safe guess, we should say probably not one in ten. And yet he made one of the great additions to the long list of achievements that have helped to make travel safe.

He was the man who made it obligatory upon railroad companies to cease making travel unduly dangerous for the men who run the trains. There is a peculiar fitness that this description of his work should end this series, as the act whose passage he secured crowned the long roll of deeds and discoveries making for the security of those who travel.

No. 6. — FATHER COFFIN'S CARE FOR THE LIVES OF RAILROAD MEN.

He Aroused Public Opinion, Memorialized State Legislatures, Prodded Congress, and Finally Saw His Safety Appliance Act Placed on the National Statute-Books.

Of all the men who have played conspicuous parts in making travel safe, just one worked from motives entirely disinterested. This one man never desired, never sought, and never received any reward whatsoever—either directly or indirectly—for years of earnest work, which ultimately resulted in the saving of many thousands of railroad men's lives, safeguarding the traveling public, expediting the whole national system of transportation, and putting untold millions into the treasuries of the railroad companies.

This man was Lorenzo A. Coffin, of Willow Edge Farm, near Fort Dodge, Iowa, originator of the national safety appliance law, under the terms of which the railroads were obliged to equip all cars with automatic couplers, air-brakes, and other appliances which lessened the danger to employees in the train service.

No mortal ever will know how many lives were sacrificed to the clumsy couplings, inadequate brakes, and other demoralion equipment in use twenty-five years ago, because nobody ever thought it worth while to keep records. The attitude of railroad officials and the public was pretty accurately ex-

pressed in these words from the annual report of the Iowa Railroad Commission in 1883:

> We regret exceedingly to be compelled to report year after year such great loss of life and so many terrible and painful accidents to these men (trainmen and switchmen), but we see no way to prevent it, and we suppose it is one of the inevitable conditions of a railroad man's life.

HANGING FOR LIFE TO A BRAKE-STAFF, TUGGING AND HAULING AT A PIN WHICH HAD BEEN HAMMERED INTO A HOLE IT WAS NEVER MEANT TO FIT.

Every railroad management in the land had its own ideas about the kind of draw-bars that should be used and the height they should be above the rails, the proper place for ladders and grab-irons, if grab-irons were used at all; the style of brake, and every other detail, and they proceeded to carry out those ideas, regardless of what their neighbors did.

The result was that the equipment of each railroad differed materially from the equipment of every other road. To make up a train required highly developed acrobatic training, expert knowledge, half a car-load of thick links, thin links, extra long links, crooked links, large round pins, medium round pins, small round pins, thick flat pins, thin flat pins, and a basket of chips.

When the switchman or the trainman had exhausted the resources of his assorted coupling paraphernalia in vain, he propped up the draw-bars with chips until he could make a coupling, or, failing altogether, set out the car for some other fellow to wrestle with. If he failed to gage correctly the height of the draw-bars on a couple of strange cars—a thing that was very easy to do on a dark night when they were coming back lively—he was apt to be crushed to a wafer when the high draw-bar slipped over the lower.

In making a cut, running between the cars over ground slippery with rain or snow, or perhaps unballasted, hanging for life to a brake-staff, tugging and hauling at a pin which had been hammered into a hole it was never meant to fit, it was an easy matter to slip and be cut to pieces in the twinkling of an eye.

Also, it was no difficult matter to get killed by being blown off the top of a car, as it bobbed around over a rough track in a gale of wind, while running to set brakes. So the slaughter went on continuously.

"Farmer" Coffin Appears.

Of course, this sort of thing interfered seriously with the movement of trains. Minor accidents led to larger ones, which destroyed much valuable property and killed passengers; which led to costly damage suits.

Leaving entirely out of consideration the danger to life and limb of railroad men and the traveling public, it was all very costly for the railroads, and it interfered seriously with travel and enhanced its dangers. Yet no change was even suggested

In 1881, when the management of the Des Moines and Fort Dodge Railroad prepared to extend the line to Ruthven, a right-of-way agent was needed, who could command the confidence of the men with whom he was to deal. Such a man was found in Farmer Lorenzo A. Coffin.

His Sympathy Aroused.

Farmer Coffin had been a teacher in Geauga Seminary, in Ohio, where he had numbered among his pupils James Abram Garfield and Lucretia Randolph, who afterward became Mrs. Garfield. Then he was a preacher for sixteen years. He was one of the early settlers of Iowa, and had been a successful farmer, and chaplain of the Thirty-Second Iowa Infantry.

His kindly face, with its grizzled beard and finely shaped forehead, was known and esteemed all over the Hawkeye State as that of a soft-hearted, hard-headed, sympathetic man who seemed to take more interest in helping others than in working for himself, and yet found time to manage his own affairs well.

One day, while traveling about on his right-of-way business, Farmer Coffin was obliged to take a freight-train to make a journey of some thirty miles, or else wait for several hours for a passenger-train. He chose the freight, and, on the way, he struck up an acquaintance with the hind man and took quite a fancy to him.

Before Farmer Coffin reached his destination, the hind man undertook to make a coupling, and, in the attempt, had a couple of fingers crushed. As they happened to be the only ones left over from previous accidents of the same sort to that hand, he was now totally incapacitated, to say nothing of the pain he was destined to suffer. Let any one who thinks even one crushed finger a trifling matter try it.

Farmer Coffin was sincerely sympathetic, and did all in his power to make the sufferer comfortable until the next station was reached, where the company surgeon was located. The incident aroused his interest. Of course, he knew that railroad men were frequently maimed and killed while on duty; but the horror of it had never been brought home to him before.

Next day he boarded a freight-train, from choice, in order that he might have an opportunity to ask questions about accidents to railroad men. He grew so interested in the subject, and, at the same time, developed such a liking for railroad men, that thereafter he traveled principally by freight-train.

When his labors as right-of-way agent had been concluded, Farmer Coffin was appointed State railroad commissioner. His duties required a great deal of traveling. He continued his practise of riding on freight-trains, and the longer he kept it up the better he liked it.

In a few months, the kindly, sympathetic, delightful old man (he was past sixty then), was esteemed as a friend by every railroad man in Iowa. They took to calling him "Father Coffin," and were genuinely pleased when he swung himself aboard the caboose for a ride

The laws of Iowa required the railroads to report all accidents to the railroad commission, and it was the duty of the commission to investigate all accidents in which passengers were killed or injured. But no investigation was required when only a few railroad men were killed

Investigates for Himself.

The more Father Coffin thought about this law the more he wondered at the discrimination made between passengers and railroad men. The railroaders were citizens, the same as the passengers, and he had learned from daily contact that they were quite as sober, God-fearing, hard-working men as the average in any other calling, and their widows and orphans seemed quite as much in need of the protection of the law as any other widows and orphans.

Father Coffin decided to investigate accidents to railroad men on his own

responsibility. His brother commissioners, when the subject was broached, did not care to do more than the letter of the law required.

So Father Coffin began single-handed to investigate all the accidents to railroad men that he could. There were so many that he could not attend to all; but he took up the subject of cause and prevention with all his energy

He found that the greatest number of deaths was caused by falling off cars, and the next greatest number occurred in making couplings. Obviously, the way to prevent these accidents was to equip all cars with air-brakes and automatic couplers. He resolved to start a crusade to compel the adoption of these appliances; and, if public sentiment supported him, to continue until the task was accomplished.

His first step was to prepare a letter, showing the terrible loss of life and limb among railroad employees, and how it could be prevented, which he sent to every religious and family paper in the land. It was printed and reprinted, and commented upon editorially in a way which convinced Father Coffin that he was on the right side of a great issue.

His long experience as a preacher now came in handy. He went about the country, making addresses on railroad slaughter and safety appliances wherever he could get a hearing, and having himself interviewed at every opportunity.

He hunted up the date of the annual national convention of the Master Car Builders' Association, invited himself to attend, and made a speech on his favorite theme which set the car builders to thinking. He did the same thing at the national convention of the master mechanics.

The more people grew interested, the harder Father Coffin pushed his crusade. He never missed a convention of railroad men, nor an opportunity to make a speech. The various railroad brotherhoods seconded his efforts by every means in their power.

In 1885 a joint committee was ap-

THEY TOOK TO CALLING HIM "FATHER COFFIN" AND WERE GENUINELY PLEASED WHEN HE SWUNG HIMSELF ABOARD THE CABOOSE FOR A RIDE

THE STATE COMMISSIONER FROM KENTUCKY WAS MOST EMPHATIC OF ALL IN HIS DENUNCIATION OF FATHER COFFIN'S SENSATIONAL AND RECKLESS STATEMENTS

pointed by the Master Car Builders' and the Master Mechanics' Associations to test power-brakes. The committee was instructed to advertise to all the world that any man who had a brake he wanted to sell to the railroads might equip a train of fifty cars and take it to Burlington, Iowa, where it would be given a thorough and impartial trial by experts, in the summer of 1886.

If any brake fulfilled the requirements satisfactorily, the two organizations would formally recommend its use by the railroads. At the same time it was announced that no railroad would buy any brake that was not recommended by the joint committee. All State railroad commissioners were invited to attend the trials. This was a great triumph for Father Coffin, and he was elated.

In Search of a Good Brake.

But the tests, which lasted three weeks in August, 1886, were a keen disappointment, for the committee was obliged to report at the close that a safe and practical brake did not exist. Five inventors appeared, including Westinghouse with his air brake. There were other air brakes, vacuum brakes, and brakes that were applied by power from the axles.

The failure of the latter was ignominious and complete. The vacuum brakes were not much better. The Westinghouse brake was then in its simple automatic stage, which was all right for a few cars; but when the brakes were applied on a long train the shocks were terrific.

The State railroad commissioners did not appear to take a very keen interest in the subject. Very few attended; and the few who came soon had enough. At the end of the second day, Father Coffin was the only commissioner left.

He not only stayed until the end, but he kept getting into the most dangerous places. He was bound to learn all there was to know about brakes, and his good angel seemed to take care of him. At least, he escaped unharmed.

Although disappointed in the results

of the brake tests, Father Coffin never relaxed his crusade. The railroad men, too, were resolved to see it through. The brake trials were repeated at Burlington in 1887. Five competitors again appeared. The result was the same as before. The Westinghouse brake again failed with the others.

But three months later Father Coffin was invited to come back to Burlington, and witness another trial of the Westinghouse brake. The inventor had been making some changes, and thought he could meet the committee's requirements.

A train of fifty loaded cars was sent thundering down a heavy grade into Burlington at forty miles an hour. At a given signal, the engineer applied the air, and the train came to a standstill in less than six hundred feet, without a jar and without a man on top. Tears rolled down Father Coffin's cheeks.

"The thing can now be done," he said.

He had gone through a similar experience with the automatic couplers. Repeated trips had been made across the State with railroad officials to test close and loose couplers to see whether an engine could haul as many cars close coupled as with the old link and pin with the immense amount of slack which that method of coupling gave. The experiments having demonstrated the feasibility of automatic couplers, Father Coffin was ready to go to work for legislation.

Laws Begin to Appear.

In the winter of 1889-1890 he drafted the first bill ever enacted to enforce the adoption of safety appliances by railroads. He spent a whole month drawing up the bill, submitting it section by section to judges of the Supreme Court to make sure that it would stand the constitutional test.

When the bill was completed, it was passed by the lower house of the Iowa Legislature with only seven votes against it. The Senate passed it without a dissenting vote, and Governor Boies signed it at once.

Later that season the Nebraska Legislature copied the Iowa law word for word. This was a promising beginning. Father Coffin was destined to score another triumph the same season.

The year before the Iowa law was passed, the Interstate Commerce Commission, recently created, had requested the various State railroad commissions to supply all the information they could regarding railroads. Father Coffin's term as commissioner had expired; but on account of the reputation he had earned in his great crusade, he was invited also.

Father Coffin made a speech on his favorite theme before the learned commissioners which started an uproar. He had correct statistics about the railroad men killed and injured in his own State; but he had to estimate the losses in other States, because no statistics on the subject had ever been collected. He made his estimates conservative.

But the commissioners were scandalized. They crowded around to protest, and prove to him that he was wrong. The State commissioner from Kentucky was most emphatic of all in his denunciation of Father Coffin's sensational and reckless statements.

He had no figures, but he was sure Coffin was wrong. A year later the Kentucky commissioner humbly confessed that upon investigation he had found that the casualties in his State were larger than were shown in the Iowa reports.

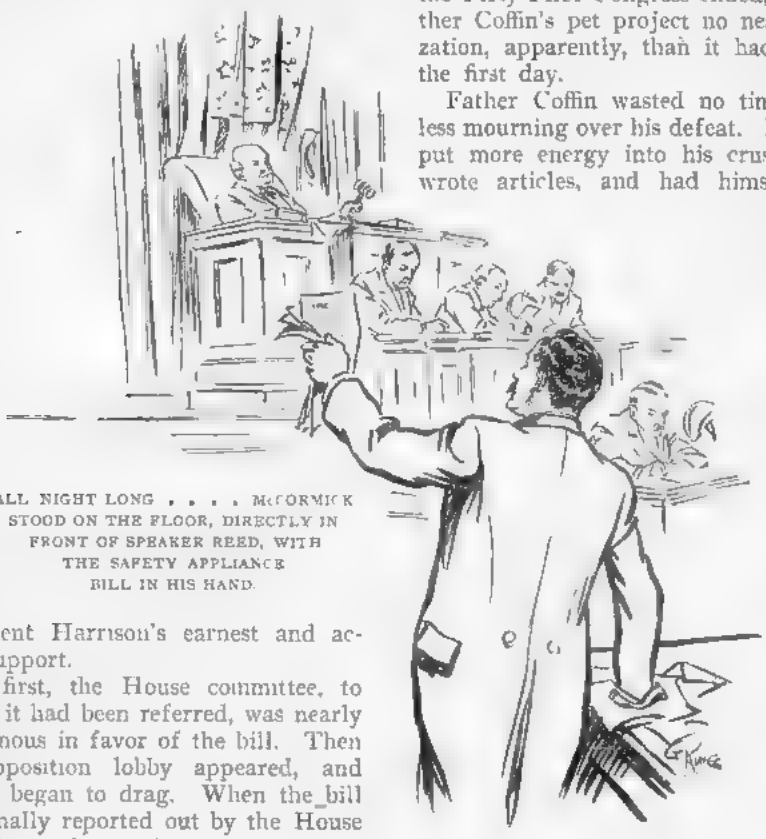
This incident led to the adoption of a resolution by the Interstate Commerce Commission, recommending the passage of a law by Congress to compel the railroads to adopt safety appliances

Father Coffin was on hand in Washington with a bill already drafted. Colonel D. B. Henderson had agreed to introduce it in the House, and W. B. Allison was to take care of the measure in the Senate.

But it is one thing to draft a bill, and quite another to procure its enactment into law. Father Coffin, however, had long ago made up his mind to spend the remainder of his natural life, if necessary, fighting for his friends, the railroad men; so he went to Washington before the beginning of the session prepared to stay as long as the Congressmen did

He moved about his self-appointed

task systematically and with patient deliberation. He interviewed every Senator and Representative, not once, but many times; appeared again and again before solemn committees; haunted the Interstate Commerce Commission; prepared statistics; drew up reports, and won President Harrison's earnest and active support.



ALL NIGHT LONG . . . . McCORMICK STOOD ON THE FLOOR, DIRECTLY IN FRONT OF SPEAKER REED, WITH THE SAFETY APPLIANCE BILL IN HIS HAND.

At first, the House committee, to which it had been referred, was nearly unanimous in favor of the bill. Then an opposition lobby appeared, and things began to drag. When the bill was finally reported out by the House committee, the session was so nearly ended that there was no hope of getting the measure through the Senate that session.

High Hopes Defeated.

Finally, the last day of the session arrived. For the sake of the prestige it would give, the Congressional friends of the bill wanted it passed by the House that session. Father Coffin had gone to Speaker Reed and begged him to recognize H. C. McCormick, of Pennsylvania, the chairman of the committee which had the bill in charge. The Senate committee on interstate commerce favored the bill; but Senator Culloin, chairman of the committee, thought it best to get it through the House first.

All night long on that closing night McCormick stood on the floor, directly in front of Speaker Reed, with the safety appliance bill in his hand; but the Czar would not recognize him, and the Fifty-First Congress ended, with Father Coffin's pet project no nearer realization, apparently, than it had been on the first day.

Father Coffin wasted no time in useless mourning over his defeat. He simply put more energy into his crusade. He wrote articles, and had himself interviewed at every possible opportunity. Wherever there was a large gathering, for any purpose whatsoever, he asked permission to make an address on his one great theme.

He never was refused but once. He tried to get various legislatures to memorialize Congress in behalf of the safety appliance act with great success. Also he induced the various railroad brotherhoods to pass resolutions in favor of the bill.

When the first session of the Fifty-Second Congress began, Father Coffin was on hand, confident of success. Month after month dragged along without any apparent progress.

After several hearings, the bill had been referred to a sub-committee of the House committee, of which J. J. O'Neill, of St. Louis, was chairman. Two members of the sub-committee wanted to report the bill, but O'Neill would do nothing; and another session ended with nothing accomplished.

An African in the Wood-Pile.

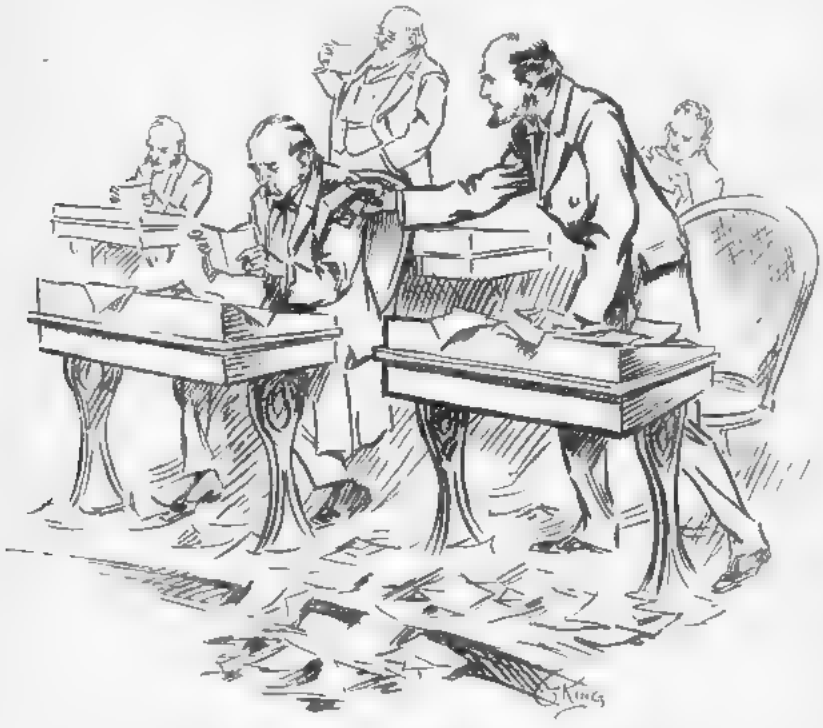
A reason for O'Neill's inactivity appeared the following summer in the form of a plank in the Democratic national platform, which abused the Republicans for their failure to enact a safety appliance law, and pledged its passage if the Democrats were given the job.

Still other reasons which would account for the delay appeared in the later history of the bill. Father Coffin had worked so long and so earnestly among the Congressmen that he knew there was a strong majority in favor of his bill.

At last, O'Neill reported the bill to the full committee, which, taking it for granted that the measure was the same that had been consigned to the sub-committee so long before, promptly reported it to the House; and it was passed, almost without opposition, July 8, 1892.

Father Coffin was happy. He felt sure his labors were now about to be crowned with success, until he met O'Neill in a corridor of the Capitol. The St. Louis statesman stopped him and said:

"Mr. Coffin, there is no need for you to stay here any longer. We will look after that bill now, and see that it passes the Senate. You had better go home. You don't understand how to manage those Senators as we do, and you may endanger the bill by some indiscretion."



CONGRESS WAS DELUGED WITH FAKE TELEGRAMS, PURPORTING TO COME FROM RAILROAD MEN, URGING THE HOUSE NOT TO PASS THE BILL.

"Well, of course, Mr. O'Neill, I could not think of staying in Washington another hour without your permission," humbly replied Father Coffin.

Then he hurried off to the legislative wood-pile to hunt for Africans. He did not have to hunt long. Senator Cullom met him, and, handing him a document, said

"Mr. Coffin, our committee has voted against this bill as it came from the House. Take this thing home and remodel it to conform to the measure you had presented originally by Allison, and I'll call the committee together and see what I can do, for I believe something of the sort should be passed."

On examining the bill, Father Coffin found that the measure the House had voted for was so totally unlike the bill he had prepared that it would defeat the object he had in view. His four years in Washington seemed to count for nothing, and Congress would adjourn in three weeks.

Senator Cullom's advice was followed promptly. The restored bill was reported by the committee, and came up in the Senate as the regular order of business, Monday, February 6, 1893.

The opposition, led by I. G. Harris, of Tennessee, and A. P. Gorman, of Maryland, fought all week long. The bill, as Father Coffin wrote it, was finally passed by the Senate at five o'clock, Saturday, February 11, 1893, with only ten negative votes.

Success at Last.

It was then returned to the House, where it was made a special order for February 21. J. D. Richardson, of Tennessee, led an opposition which resorted to every device known to filibusters to defeat it.

As a result of these tactics, that Congressional day lasted till 6.30 o'clock on the morning of February 22. By agreement, the bill then went over to suspension day, February 25.

In that interval of three days, Congress was deluged with fake telegrams, purporting to come from railroad men, urging the House not to pass the bill. Father Coffin was loaded for just such a contingency.

He had petitions from railroad brotherhoods, representing more than a hundred thousand members, asking for the law in strong terms. He had a copy of these petitions laid on the desk of every member of the House on the morning of the 25th.

Colonel D. B. Henderson called attention to the petitions, and used some strong language about the fake telegrams; then he collared Tom Reed, and marched him out of the House so that he could not vote against the bill. When the test came, there were five more votes than the two-thirds necessary to pass the bill under suspension of the rules. President Harrison signed the bill on the day before he went out of office

Since the safety appliances have come into use, the railroads have been able to handle more business in less time and for less money. Heavier trains are moved, accidents are fewer, and the traveling public gets the direct benefit of all these conditions in greater security. The railroads would not think of trying to operate now without automatic couplers and air brakes.

Father Coffin went home, after his bill became a law, to live out a green old age. He could not stop altogether his neighborly efforts in behalf of his old friends, the railroad men. So he helped to found a home near Chicago, where railroaders, disabled by accident, or incapacitated by old age, could spend the remainder of their days in peace

And that's what Father Coffin did.

(The End.)

THE WEAKER SEX.

BY L. B KINDER.

But "Tough" Kneeshaw Probably Has His Own Views About That Weakness.

At first sight of Assistant Yardmaster Kneeshaw you inevitably compared the cheerful rotundity of his face with the cheerful rotundity of his stomach. To be sure, the latter swelled out the tail of his blue chambray shirt within scandalous proximity of his trousers-waistband; yet as surely the former swelled the tail of his throat entirely out of his collar-band. But when you caught his twinkling blue eye, you ceased to speculate upon the relativity of the two expanses, for his smile eclipsed both with a radiance that included his whole person.

To aver that he is the most popular man in the city invites opposition from the friends of every alderman, but none will gainsay that he is the most sought after. It is "Bob" this, and "Bob" that, and "Bob" the other.

It is "Have a cigar, Bob?" which, being interpreted, is: "Spot me a car, Bob"; and "Let me send your wife a barrel of apples, Bob," which, being interpreted, is: "Rush those refrigerator-cars up so I can unload them"; and "If you want anything in our line, Bob, we'll give it to you at wholesale prices," which, being interpreted, is: "See that we get cars set and picked up when we want them."

His fellow switchmen have made Bob president of Local 207; and his lodge friends have made Bob the "Scribbling Heifer" of the "Loyal Order of Cow," and "Worthy Montezuma" of the "Antique Order of Aztecs;" and the division superintendent vows that he will make Bob yardmaster of the big yards as soon as he can safely ditch Old Anglebars, the present incumbent; and his brown-eyed, slender wife makes "Robert, dear," the hero of two sturdy, brown-eyed boys, who rank "Paw" second only to a mighty number ten-hundred switch-engine.

Ten years ago Bob Kneeshaw was famed as "Tough" Kneeshaw, the most profane switchman on the division. He was a stocky young fellow then with an aggressive blue eye and a war-lock drooping down his forehead. Week-days, with felt hat slouched over his eyes, he threw switches and rode "cuts" and set hand-brakes and jumped foot-boards and cursed and signaled and clung to the ladders of flying cars. Saturday nights he shaved and laved and, with derby cocked on the side of his head and gaudy four-in-hand flaunting at his throat, he sauntered forth to a tough dance or a tour of the resorts of the railroad quarter.

Sundays he loafed, played pool, or roamed the streets ogling young women and "ketching on"—to use his own phrase—to those who smirked encouragement. Notwithstanding, he was an alert, intelligent, faithful worker, which in itself would and did transform him from a switchman to a yardmaster. His transformation from Tough Kneeshaw to Bob Kneeshaw is a less banal story.

It is commonly said that one may become proficient in a language by practising it thirty minutes a day. So it is with bad language. By such practise Robert Kneeshaw not only became proficient in profanity, but gained his sobriquet of "Tough."

This came of the custom of the six

yard-crews, who met in the "big" switch-shanty, of "bawling" one another out over their dinner-pails. Kneeshaw showed no talent in these debates until one day he turned upon an engineer, who had most vilely berated him, and vituperated the other with stinging invective that then and there made his reputation.

Thenceforward he had but one worthy rival, "Spike" Smiley, a swarthy switch-foreman with a black mustache and three children. Their noonday clashes aroused more interest than the debates in Congress, and provoked more discussion than the impending election of officers in the switchmen's union. With practise their vocabularies waxed better, or rather worse; for shame be it said, no simile was too vile, no epithet too blasphemous for either to howl at the other.

One Saturday afternoon when Tough Kneeshaw—as he was now generally hailed—was in the heyday of his reputation, he was standing, switch-stick in hand, beside a string of box cars, waiting for the union depot crew to put their passenger coaches around the Y. His corduroyed sheepskin coat was unbuttoned, showing a jaunty, fluttering black bow at the throat of his blue flannel shirt; and his blue cap was pushed back, letting the hazel war-lock slouch into his left eye.

It was not alone the winter sunshine, but triumph, that made his face radiant. He was felicitating himself upon the brilliant blasphemies with which an hour ago he had for once completely silenced the volubly vituperative Spike.

He glanced down the lead track at the approaching dinky depot engine; then across it to make sure that the little boy was safe in the back yard of the tidy white house beyond, and leaned nonchalantly against a box car. As the engine clattered by with its string of coaches, he shouted a friendly blasphemy to the men on the footboard. In the crisp silence which followed he heard a childish repetition of the remark.

He chuckled at the incongruity of the tone and the oath; then he paled, for a pretty woman came running out of the house.

"How *could* you, Eddie?" she gasped. "Where *could* you have learned such naughty words?"

The horror in her voice thrilled Tough Kneeshaw with shame at having blasphemed before a child. He felt, to use his own simile—of late he had become fluent in similes—that it was like spitting tobacco-juice upon a flower. Impulsively he crossed the track.

WHEN YOU CAUGHT HIS TWINKLING BLUE EYE, YOU CEASED TO SPECULATE UPON THE RELATIVITY OF THE TWO EXPANSES.

The sight of his burly sheepskin over the fence startled the woman.

"Say, it's my fault, ma'am," stammered Tough, all the more confused to see how little the boy was and how like his pretty mother, for such he took the other to be. "I forgot there was a kid around when I swore."

"I'm sure you didn't mean to," she murmured, showing like embarrassment. "Eddie's *so* quick at learning things he oughtn't to."

The child, losing fear of Tough, fidgeted out of the woman's clutch and ran through the back gate.

"He'll be run over!" she screamed.

Tough lumbered after, frightening the boy, who darted between the cars. There was a crash.

"Oh!" shrieked the woman, covering her face.

eration that the crash heard was that of cars on the other side of the train only provoked fresh gratitude from which Tough was unwillingly rescued by the starting of his own line of cars.

"My sister never, never would have forgiven me," she murmured, "if — if anything had happened."

She shuddered; the boy sobbed at her

OGLING YOUNG WOMEN AND "KETCHING ON"—TO USE HIS OWN PHRASE—TO THOSE WHO SMIRKED ENCOURAGEMENT

Tough dived between the trucks and rebounded, gripping the bellowing boy. The young woman dashed out of the gate, caught the boy in her arms, and stifled his howls with kisses. Tough stood awkwardly by, assuring her that the little fellow had not been in danger; but, far from convincing her, his reit-

neck. Tough, alert to the rattling trucks, half turned in readiness to flip the last car.

"You must come and see us, 2507 Ontario Street," she commanded, beaming upon him. "His mother will want to thank you. He is—"

Then *she* was not his mother! Tough's

heart leaped. He did not hear the rest for admiration of the red lips and the limpid tones. What a dainty brown dress she wore! And was there ever such a brown as that of her hair? Yes, the surpassing brown of her merry eyes!

Too soon the last car came, and Tough swung on. Turning on the ladder, he saw her wave good-by, and answered with a reverential doff of his cap.

Tough did not go to see her. Sunday afternoons he wandered down Ontario Street, and evenings he lingered to stare into the lighted parlor of cozy, white, story-and-a-half No. 2507 in the hope of a glimpse of her. The flutter of a brown dress on the street set his heart beating, as did brown eyes and tresses wherever he saw them. He would have given a month's pay for courage to go to the glazed front door and ask for her.

But in a month, ceasing to dream about her, he slouched back into his old ways. He blasphemed Spike with such ardor that the latter was hard put to it to retain his recently regained laurels; and finally, one Saturday night, he cocked his derby on the side of his head and, flaunting a new, red-spotted green tie, swaggered down the street bound for the "Frolickers'" ball. On his way he fell in with Spike Smiley, homeward bound, with his arms filled with Sunday dinner purchases.

"You'll come to it yourself," chuckled Spike, who, for all his evil tongue, was the best of husbands

"Say," retorted Tough, "when a guinea gets the husband-hold on me, you'll know it!"

"I used to take in all the dances," declared Spike as he left him. "I half wish I was going with you."

Tough sauntered on, whistling softly beneath his breath. What a fool he had been to deny himself life's pleasures and be a "goody" for the sake of a girl he might never see—again!

Yes, it was *she!* She was walking between a thin man in a fur-collared ulster and a pleasant, plumper woman that looked to be her sister. Tough thrust up his hand to doff his derby, but disconsolately brushed back his war-lock; for, although she glanced up, she did not recognize him in his finery. The pleasure of seeing her, however, somewhat salved his disappointment.

"Say, boy," he soliloquized with warming enthusiasm as he meandered along, "ain't she the real style, with a hat as big as a roundhouse and the black fur on her neck? Say, her little face looks cute as a kitten under a bushel-basket. And her eyes—they shine like main-line rails! And she's sweet as a glass of country milk! There's nothing to it, she's the caboose for me!"

His musing was interrupted by the roystering of fiddles. He stopped short, glowered up at an illuminated sign:

FROLICKERS' CLUB DANCE.
All Invited.
FIFTY CENTS.

He flushed, turned on his heel, and stalked home to bed.

He went to sleep with his mind made up, and rose late Sunday morning in the same mind. He shaved with extra care, thereby slashing his chin, reblacked his boots, and, after wasting an hour trying to select a telling combination from his three clean shirts and five best ties, he slipped down the boarding-house hall to consult "Dude" McArdle, the Beau Brummel of the yards, who got out of bed to let him in. With brown eyes dead, features drawn, and curly mustache limp from the Frolickers' dance, he was far from looking the beau of the night before.

Tough, however, cared not a rap for Dude's appearance, and even less for his account of the dance; but when the latter put his entire wardrobe at Tough's service and suggested several fetching combinations, Kneeshaw hung on his words. At length Dude selected a white vest and a lavender shirt with green stripes that pleased his friend; but, though he offered tie after tie, Tough would have none of them.

"Say," growled Dude in justifiable exasperation, "you'd better take your next month's pay and buy you one that suits you."

At 3 P.M. sharp Tough timidly pushed the bell-button at No. 2507

TURNING ON THE LADDER HE SAW HER WAVE GOOD-BY.

Ontario Street. The pleasant, plump woman, looking in her white shirt-waist even more like the other than on the street, came to the door. As Tough stammeringly introduced himself, *she* hurried to the door and welcomed him. Her name, he learned, was Carolyn Meyrick, and the sister was Mrs. Gardenplumber.

From that time on Tough had easy sailing. The two women were grateful; the husband, who more readily accepted the switchman's assertion that the child had really been in no danger, was affable in hope of coaxing the "railway boys" to trade at his clothing-store; the little boy fell asleep in his lap.

They made Tough stay to supper, after which Mr. and Mrs. Gardenplumber excused themselves to run over to say good-by to a neighbor who was going away on a morning train. Tough, fairly voluble with Mr. G., was panic-stricken on being left alone with the object of his adoration. Carolyn, however, adroitly coaxed him out of his embarrassment. In the silence following his laughter at one of her sallies they caught the clang of a near-by bell.

"Church-time" laughed Carolyn.

Tough flushed with inspiration. He would ask her to go. But how? Had it been to a dance, to a "show," or to a "feed," he could have muttered the requisite formula. But to church! His face darkened with embarrassment.

So upset was he at the thought that he, a member in good standing of the Switchmen's Union and chief gallant of the Saturday night dances, did not know how to ask a girl to go to church with him that he soon after departed, promising, however, to call again real soon.

Every day the following week Tough bought a new paper-covered book on etiquette, and every night he hurled the unused volume under his bed, no wiser than before. Although they told him how to eat olives, how to write a letter to the President of the United States, how to woo in fifty ways, how to take out a marriage license—which Tough copied in his memorandum for an emergency—and how to ask a lady to go everywhere

from an art gallery to a zoological garden, by a strange inadvertence not one of the manuals contained instructions for asking her to go to church. As the only way out of his dilemma, he consulted Dude McArdle.

"It's a cinch," the latter chuckled superciliously. "Like every dictum of society, it's what you'd naturally say. Give me the makings, Tough."

"What is it?" asked Tough eagerly, handing over his tobacco and papers.

"*Would it be a pleasure to you, Miss*—Put her name in here, Tough—" Dude declared, rolling a perfect cigarette, "*to attend worship with me this morning,* or *evening,* or *afternoon,* if it's a mission church?"

Tough stored the formula in his mind for ready use when he called that Sunday evening, but Carolyn forestalled him.

"I don't think you railroaders are as pious as you ought to be, Mr. Kneeshaw," she asserted demurely. "I'm going to take you to church with me."

It was an unpretentious church, with a genial young pastor, a violent quartet, and a large, young congregation that optimistically tried to drown the noise of the quartet. Tough, joining lustily in the fusillade, suddenly discovered that he was bellowing the sacred words with an unmistakable switchman's twang. Whereat he moderated; attracting as much attention by lowering his voice at each sacred word as he had by raising it. On the way home Carolyn rallied him for this, whereupon he screwed up

CONGRATULATIONS, *MR. KNEESHAW!*" CRIED DUDE, ALSO BECOMING PERSPICACIOUS.

courage to tell her that her hat was as big as a roundhouse.

The next day at the dinner-hour Spike Smiley assailed a new Swede switchman with full vocabulary. For five consecutive minutes he blasphemed the fellow.

"Phew!" sniffed Tough, flinging open the door. "This room smells with your conversation, Spike. If I was you, I'd sweeten my tongue with a little clean earth."

Spike turned wrathfully upon him; but before he could catch breath, Tough sandbagged him with the most stunning "bawling out" ever recorded in local switch-shanty annals, and, wonderful to relate, there was not a single unmailable phrase in the whole anathema. The next morning it took a good eighteen hours for him to regain his equanimity—Spike shook hands with Tough in acknowledgment of the other's superiority.

"I'm done with cussing for a reputation," he averred. "If any of the other boys start it up, we'll throw 'em out, eh?"

"You setter!" chuckled Tough. "It was bad enough for me, Spike, but I can't see how you could talk that way with a nice little wife."

"So some gunnea's got the husband-hold on you," interrupted his friend. "What's her name, Tough?"

"Carolyn," flushed Tough.

"It'll be 'Carrie' before the month's out," chuckled Spike.

Though the front of 2507 Ontario Street was dark, strips of light around the drawn blind of a side window assured Spike Smiley and Dude McArdle that somebody was at home. As they walked around the house, Tough's familiar laugh reassured them. They tapped lightly on the back door. There was no answer save the rattle of dishes, Tough's confidential tones, and feminine giggles.

Dude impatiently pushed open the door; then he shrank back incredulously. For beside the sink, flanked by the kitchen-table and the range, Robert Kneeshaw—"Tough" Kneeshaw—champion blasphemer and ridiculer of matrimony, stood with four-in-hand awry and apron around his waist, wiping dishes for a little brown-eyed girl with a great brown pompadour!

"We came to tell you that the third-district extra leaves at nine fifty instead of midnight," stammered Dude.

"And that Jack Wilson will go in your place," spoke up Spike with perspicacity.

"Congratulations, *Mr. Kneeshaw!*" cried Dude, also becoming perspicacious.

"Congratulations, Bob!" cried Spike, pulling the door shut.

Tough stared at the closed door.

"Say, what'd they mean?" he muttered and turned to Carolyn, who had shrunk behind him. His hand grazed hers. She did not shrink. He seized it.

"I know!" he cried, slipping his arm about her. "I'm on the lead track to matrimony. Throw the switch, dearie, and we'll shunt down to the minister!"

She raised her blushing face. He saw his happiness in her eyes and kissed her.

A NEW CAR-HEATING SYSTEM.

A Scheme by Which the Passengers Will Be Neither Roasted Nor Frozen in Sudden Changes of Weather.

A NEW system of heating is being experimented with by the Pennsylvania. A baggage and mail-car has been equipped with the vapor trap-heating system of the Chicago Car Heating Company, by which the heat of a car is automatically regulated and kept at a fixed temperature

The trap by which steam is admitted to the heating pipe, whenever the temperature of the car falls below a certain degree, also closes automatically when the temperature of the car rises above a desired point. The valves are so arranged that they will admit only an atmosphere pressure, even if the pressure of the feed-pipes exceeds two hundred pounds.

HELP FOR MEN WHO HELP THEMSELVES—NUMBER 21.

KEEPING A RAILROAD TRACK IN ORDER.

BY CHARLTON C. ANDREWS.

MANY are the crude jokes that have been cracked at the expense of the humble section-hand. As the flying limited spurns the miles behind it we give scarce a glance to the little group of men in overalls and red shirts who lean on their shovels and watch us whirl by. Yet they are the chaps who make the limited possible, and smooth the pathway of those who loll on plush cushions in the varnished cars

The maintenance of way department is fundamental in railroad work. All the great engineering problems of railroading have their practical beginning and end here, and the existence and size of the dividends accruing to the owners of the road depend in no small part on the intelligence and activities of the men in overalls and red shirts.

Some of the Things That the Men on the Section Must See, Be, Do, and Know, and What Their Work Costs the Company.

AS soon as the contractor has formally turned a newly built railroad over to the company, section-men, aided by work-train crews, rush in and reconstruct the road to make it safe for the passage of trains. Weeks, perhaps months, of energetic surfacing may be required before the management dares venture to open the line for traffic

This work of reconstruction, begun as soon as the last spike is driven, never ends; for, of all the works of human hands, a railroad track is least inclined to "stay put." Every week-day in the year, and on many a night and Sunday besides, repairs are kept up by bridge gangs, floating gangs, work-train crews, and section-men

The greatest burden of this ceaseless grind falls on the trackmen, who constitute one-fourth of the great railroad army. According to the Interstate Commerce Commission, 15.67 per cent of the total operating expenses of railroads is consumed in the effort to keep track in working condition

As in everything else pertaining to the railroad, methods in maintenance of way differ so widely that it is possible to speak of the work only in general, rather than

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specific, terms. The responsibility for maintenance of way is divided between a superintendent of bridges and buildings and a roadmaster on each division, who usually report to the division superintendent, who in turn reports to the general superintendent or general manager. But as the science of railroading develops there is evident a growing tendency to place this work under the charge of the chief engineer, instead of the division superintendent

The jurisdiction of the roadmaster may be limited to a hundred miles of main line, on which he may have the assistance of one to three supervisors or assistant roadmasters, or it may be extended to any length up to four hundred and fifty miles, on which he may have one assistant or possibly none at all, depending altogether on the importance of the road and the volume of traffic; obviously, the heavier the traffic, the greater the amount of work required to keep the track in condition.

In this connection it may be interesting to know that "heavy traffic" has been defined by the Interstate Commerce Commission as twenty-seven or more trains passing over one track in each twenty-four hours, and by the International Railway Congress as ten thousand trains per track per year, which is nearly the same thing.

Must Know the Road.

Whatever the length of track in his care, the roadmaster is expected to keep in the closest possible touch with every foot of it. It is now pretty generally conceded that this cannot be done by riding over the road occasionally on the limited, dropping off "butterflies," as notes flung from the rear platform of passenger-trains are called, to the section-foremen.

If he is to do his part in earning dividends, the roadmaster must ride over the road, not only in the varnished cars, but also in engine-cabs, cabooses of way-freights, and on the humble velocipede, that he may become familiar with the actual condition of track from every angle of vision and feeling. Even this is not enough. If the roadmaster really wants to cultivate that intimate acquaintance with low joints, decaying ties, and bad alignment—to say nothing of his section-foremen and their ways, necessary to efficient supervision—he must walk, walk, walk.

Whenever there is a wreck, or a washout, or a landslide, the roadmaster is expected to be on the spot with the wrecking crew to clear away the débris and get trains to moving again at the earliest possible moment. If he is lucky, he may get home around Christmas, and perhaps on a few other occasions during the year.

Boss of the Job.

Next below the roadmaster, or the supervisors, if there happen to be any, come the section-foremen, or bosses, as they are universally called in the vernacular, the work-train conductor, and the foremen of floating gangs, who are merely glorified section-bosses in charge of large gangs which do odd jobs in track maintenance too heavy for the small force of the section-boss.

The section-boss is responsible for the up-keep of a section of the road from four to ten miles long on single track, or from two and a half to five miles of double track. Three miles of double track are considered to be equivalent to five miles of single track, and two miles of important siding or three miles of little-used siding or fifteen switches are considered equal to one mile of main line in apportioning work for the section-boss. The boss gets about fifty dollars a month, often with house rent free, and perhaps room for a vegetable garden on the right of way.

Usually the boss's crew is made up of one man to the mile of track in the section, though sometimes the allowance is only three-quarters of a man per mile, exclusive of the foreman and the track walker. If there is some special work that the crew cannot attend to without neglecting their regular duties, a floating gang or a work-train is sent to look after it. The section-men get about one dollar and a quarter a day.

Like everything else, section work is not so easy as it looks. To be sure, it is performed with a few simple tools by what is designated as "common labor." But the novice who thinks to qualify for the position of section boss by a few

weeks' practical experience and a ready wit is doomed to bitter disappointment. A section-boss competent to hold his job under any circumstances must know how to do fifty different kinds of work, with so many variations in the way of doing them that an apprenticeship of two years is considered none too much in which to learn all the wrinkles.

The sort of training to be had on the section is becoming so highly esteemed at headquarters nowadays that young engineers often take a post-graduate course with the shovel and spike maul. When John F. Wallace was chief engineer of the Illinois Central he arranged a system of apprenticeship on the section for all recruits to the engineering staff. The most successful candidates served their time on the section first and studied engineering afterward, for they were thus practically grounded in the fundamentals, and were therefore enabled to avoid waste of time on non-essentials

Keeping the Track Level.

The first thing required of a section-boss is close and continual inspection of the track. If a track-walker is employed, he is expected to make two round trips over his section, walking from sixteen to twenty miles a day, carrying a tool of some kind and watching for broken rails, loose bolts and spikes, open gates, or broken fences through which stock might wander on the track, and anything else that may be out of order. He also lights switch-lamps in the evening and extinguishes them in the morning.

He must be familiar with the time-card, so that he can protect trains if anything goes wrong. He is not expected to stop to do anything that requires much time, but to report the trouble to the section boss.

The best man in the section-crew is assigned to do the track-walking. He costs the railroad company about ninety dollars per mile of track per year. The great trunk lines have both day and night track walkers.

If no track-walker is employed, the section-boss and his gang must cover the section once a day on the hand-car. After that is done they are ready for the drudgery of track work.

A task that begins in the spring as soon as the frost is out of the ground and continues until freezing weather in the fall is resurfacing and renewing ballast. The impact of passing trains is constantly hammering the joints of the rails down and throwing the whole track out of level and alignment. In winter, in addition to the hammering of the trains, track that is not properly drained heaves badly by the action of the frost.

As nothing can be done to the road bed while the ground is frozen solid, the only way to keep the road open is to keep the track passably in shape with "shims." A "shim" is a piece of wood inserted between the tie and the rail and spiked down when they show signs of separating. It may be of any thickness from the point of a shingle to two ties piled on top of each other and bolted in place.

In surfacing, a track-jack made for the purpose is inserted under the rail on each side to lift the track up far enough to allow ballast to the desired depth to be thrown under the ties. When a sufficient amount, as near as can be judged, is thrown in, the track is lowered and the jacks are moved half a rail-length ahead and the process is repeated for several rail-lengths.

Then the boss bestrides the rail from sixty to a hundred feet back of the point of operations and "lines" the track by sighting along the rail, while from four to six men with crowbars throw the track in and out at the word of command until they get it perfectly straight.

Next the boss gets down on his knees and sights along the top of the rail, while the men with pinch-bars lift the ends of the ties at low places and tamp them temporarily in position until the whole stretch is brought to a level. A track level is then used to level both rails transversely, and the whole crew is set to work tamping. Finally, when everything has been done to suit the trained eye of the boss, enough ballast is thrown in to bring the road-bed up to standard cross-section.

One man should lift, tamp, fill in, and dress forty feet of track in a day where the lift is from six to eight inches, and from sixty to sixty five feet where the lift is from four to six inches. The cost of

surfacing runs from ninety-five dollars to two hundred and ten dollars a mile a year. Probably one hundred and fifty dollars a mile a year would be a fair average

Broken Stone the Best Ballast.

Broken stone makes the best ballast, as the pieces fit together under the tremendous pressure until they are almost like masonry. The weight of passing trains is thus distributed over an area of subgrade that increases in proportion to the depth of ballast. Ties will not move laterally in broken stone, and are not so liable to decay, since water drains off more readily.

The standard size of broken stone varies on different roads from pieces that will pass through a 1-inch ring to pieces that will pass through a 3½-inch ring. The least depth to be of any value is 8 inches. From this the depth runs up to 18 inches on the best track. Only very hard rock, like trap, granite, and hard limestone, is suitable for ballast.

For every inch in depth below the ties, 4 cubic yards per hundred feet of track are required. On the Pennsylvania, where the broken stone must be filled out over the ends of the ties, 2,800 cubic yards per mile are required, which at $1.25 per yard amounts to $3,500. Gravel, which makes the second best ballast, costs only about 60 cents a cubic yard, or say $1,500 a mile when 2,500 yards are used.

Gravel makes poor ballast unless it is washed, as the best contains enough loam and sand to grow weeds, hold water, decay ties, and make dust. A good gravel-washer will clean about 1,500 cubic yards a day at a cost of 23 cents a yard.

Tie renewals constitute one-fifth of the expense of track maintenance, which is twice the cost of rail renewals. An average of 250 to 350 new ties are placed in every mile of railroad track in the United States every year at a cost of 10 to 20 cents each for labor. To take out and replace ten ties in rock ballast is a good day's work for a man. In gravel he can take out and replace from 14 to 18 ties, and in dirt ballast 20 ties a day.

Oak ties are the best and most expensive, costing about 80 cents each, but every other kind of wood is used. In size they run from 6 to 12 inches wide, 6 to 8 inches thick, and from 8 to 9½ feet long. A sawed oak tie 7 by 9 inches and 8½ feet long will weigh about 195 pounds. From 150 to 250 ties make a car load. From 2,464 to 3,520 are laid to the mile, which is at the rate of 14 to 20 ties to the 30-foot rail.

Now that timber is getting so scarce the railroads find it necessary to use some sort of preservative, usually oil of creosote or zinc chlorid, which is applied under pressure for several hours at a time in a steel chamber. In 1905 ten per cent of the ties used in the United States were so treated. These processes more than double the life of the tie. A pine tie that would last only from three to five years without treatment will last from eight to twelve years when properly treated with a preservative.

Another plan for prolonging the life of the tie which is rapidly extending in the United States is the use of the tie plate. These are square plates of steel 8 by 8½ inches and from 5-16 to ⅜ of an inch thick, with flanges which are forced into the tie lengthwise of the grain to hold the plate in place. These plates prevent the rails from cutting into the ties and thus destroying them.

Making Ties Live Longer.

Metal ties are coming into use rather extensively. In Germany in 1907 one-third of all railroad ties in use were of metal. A great variety of experiments with metal and concrete ties have been made in this country. The Carnegie tie, of which half a million are in use, appears to be the most successful thus far. It is an I-beam 5½ inches high, 4½ inches wide on top, and 8 inches wide on the bottom. It is 8½ feet long, and weighs 164½ pounds.

The rails are held in place by clamps and bolts. As a steel tie will last from twenty to forty years, it eventually becomes firmly bedded, and rarely needs to be disturbed. This insures a good track at a low cost of maintenance.

Whatever the tie may be, there is an art in getting it properly into place that is born only of long practise. After the spikes are pulled, enough ballast must be

dug out to allow the old tie to be removed and the new one put in its place. Great care must be taken not to disturb the road-bed more than is necessary, because if the ballast is loosened unduly the new tie will be pushed down below the level of its neighbors by the first train that passes, and will be unable to furnish its share of support.

The result is a low spot, and perhaps a bent rail. On the other hand, if too much ballast is tamped under the new tie it will be lifted above the level of adjoining ties, with equally disastrous results.

This tamping process, by the way, has done more to turn the whole race of section bosses into confirmed misanthropes than any other one thing. It looks easy, but it isn't anything of the kind. Most roads furnish tamping bars for ramming ballast under the ties, but they are of no use except in rock ballast. In dirt and gravel the shovel is the only satisfactory tool.

Not Easy to Learn.

Experienced men will save the spikes pulled from the old tie for use in the new, even if the boss isn't looking. If bent or broken they are gathered up and added to the scrap-pile. In handling new material it may be useful to remember that spikes are 5½ inches long by 9-16 of an inch square, and run 280 to the 150 pound keg, or a little more than half a pound each. A track bolt and nut weigh a little less than a pound

Rails are always sold by the gross ton of 2,240 pounds. Rails weighing 60 pounds to the yard are the lightest used nowadays. The 80-pound rail was first used on the New York Central in 1884, and the 100-pound rail in 1892. The 100 pound rail in use on the New York Central is 6 inches high, 5½ inches wide at the base, and 3 inches wide at the base of the head.

The Pennsylvania 100 pound rail is only 5½ inches high. The 80-pound rail, which is 5 inches high, is 33 1-3 per cent heavier than the 60-pound rail, which is 4¼ inches high, but is 62 per cent stronger and 91 per cent stiffer. This increased stiffness distributes the weight of a passing train over a greater area and over more ties, thus reducing the pressure on track and road-bed. The settlement of track is decreased, and rails do not cut into the ties so badly.

What About the Curves?

A couple of rails are distributed along each mile of track on some sort of scaffold, so they will not be buried in snow or frozen down in winter, where they may be readily found for replacing broken ones. On most roads each section has also piled up near the section-house enough rails to lay a thousand feet of track in case of a wreck.

The outer rail on curves is elevated above the inside rail, in order to overcome the tendency of centrifugal force to throw the train out and over. The amount of superelevation, as it is called, naturally varies with the degree of curvature and the rate of speed. The ideal elevation on a 2 degree curve for a speed of 10 miles an hour is ⅛ inch; for 20 miles an hour, ½ inch; for 40 miles an hour, 2⅛ inches; for 60 miles an hour, 4¾ inches, and for seventy miles an hour, 6½ inches

For a 3-degree curve the superelevation should be ¼ inch for a speed of 10 miles an hour, and 9¾ inches for a speed of 70 miles an hour. On a 10-degree curve the superelevation should be 5⅞ inches for a speed of thirty miles an hour, and on a 20-degree curve 1⅜ inches for a speed of 10 miles an hour, and 8⅛ inches for a speed of 25 miles an hour, which is the limit of safety.

But in practise these ideals are somewhat modified by the necessity of running all kinds of trains at various speeds. If freight traffic predominates, and passenger speed does not exceed 45 miles an hour, the general rule is to allow ¾ of an inch of superelevation per degree of curvature up to a maximum of 5 inches. If more than 45 miles an hour is common, the rate is 1 inch per degree of curvature up to a maximum of 6 inches. For high-speed passenger traffic only the allowance is 1¼ inches per degree up to 6 inches.

Rough-and-Ready Mathematics.

If there is no monument at the curve to give its degree, a new section-boss or

work-train foreman may not know just how much superelevation to allow in resurfacing. To ascertain what the degree of curvature is, and consequently what the superelevation should be, the foreman has two men stretch a tape line or cord 62 feet long, so that the ends just touch the gage or inner side of the outer rail, while he measures at the center from the line to the inner edge of the rail.

The distance in inches is the degree of curvature; that is, if the line is 3 inches from the rail at the center, it is a 3-degree curve; if 4 inches, a 4-degree curve, and so on.

Or, if he has forgotten his tape line, the foreman can still find the degree of curvature with his good right eye and his memory. As the track itself offers an ever-ready middle ordinate of 4 feet 8½ inches, all the foreman has to do is to sight from a joint in the outer rail across the curve, so that the line of sight just touches the gage side of the inner rail.

Then, while a man holds a shovel at the point where the line of sight strikes the outside rail, the foreman counts the number of 30-foot rails from his point of view to the shovel. If there are 15½ rails, it is a 1-degree curve; if 11 rails, a 2-degree curve; if 9 rails, a 3-degree curve; if 8 rails, a 4-degree curve; if 7 rails, a 5-degree curve.

Constant watch is necessary to keep the track in gage. The grinding of the wheels wears off the rail-heads, while the cutting of the rails into the soft wood of the ties and the loosening of the spikes allow the rails to spread. When track is more than one-quarter inch too wide, spikes are drawn on the gage-rail, and it is thrown in against the gage.

Weeding the Right of Way.

On a road with gravel or dirt ballast a good deal of time in summer is devoted to the back-breaking work of cutting weeds with shovels at a cost to the company of $5 to $40 per mile per year. If the company doesn't like this it has the alternative of using a weed burner, which does the work at a cost of $1 50 to $4 a mile per year. The weed-burner usually consists of an old flat car, with a small engine to run an air-compressor, and tanks for water and crude-oil.

"Police" work takes up a lot of time, particularly around stations. It consists in picking up all sorts of rubbish, burning refuse, piling scrap iron, and doing whatever may be necessary to keep the right of way and station grounds in neat and orderly condition.

There is no telling what a section-crew may be called upon to do. In case of a wreck or a washout or a mishap of any kind the men may be routed out of bed at any hour of the night for a rush job. In winter, after a blizzard, they may be sent out with a snow-plow to shovel out the engines when they get stuck. In a temperature of twenty to thirty degrees below zero and a brisk wind this is not the pleasantest occupation in the world.

Easy Jobs for the Boss.

At night while he is resting the boss can make out his reports. These include a monthly time-report, going into an elaborate analysis of the amount of time spent in doing all the fifty different kinds of work that is possible on a section, so that the auditor can trace every penny of expense to its final resting-place. Then there is a tool-report, showing what tools are on hand, what have been worn out or broken, and what are needed.

Next comes a material report, showing what material has been used, and how much of each kind is on hand. If a rail breaks, an elaborate printed form must be filled out, giving the whole life history of the rail and the circumstances attending its failure. Perhaps the boss may have to cut off the broken ends and send them to headquarters for the engineers to hold a post-mortem upon.

If a foolish calf wanders on the track, and has not sense enough to get off again without help when a train comes along, the section boss has to write categorical answers to some forty questions, more or less, about the affair for the benefit of the claim agent. If the calf or other animal survives an encounter with a train, the boss is required to help the owner to get it away, if asked to do so, and answer all the questions besides. Fires on railroad property or along the right of way, accidents of any kind causing damage to

property or to persons, no matter how trivial, all call for detailed reports by the boss on the first train going toward division headquarters.

But the boss has his reward at last, on a good many roads at least. Late in the fall comes the annual inspection, which results in some lucky boss having a post bearing a huge sign set up on his section, announcing that it is the best-maintained section on the road. Or, in lieu of the sign, he may get one hundred dollars or some such matter in gold, which is even more convincing.

Or, failing both sign and gold, he will at least get a ride over the whole road in an open inspection-car, with all his fellow bosses, so that he can see with his own eyes how much better he understands the toilsome art of track maintenance than any one else. Then there will be a day or two of meetings at headquarters, with addresses by the roadmasters and the engineers, and discussions by the bosses themselves.

Hope for the Humble Hand.

There is hope, too, for the hard-working section-hand. If he betrays interest in his task and aptitude in learning it, he will be ordered some fine day to report to the foreman of a floating gang, which is valued by the management as a training-school for foremen, as well as for its handiness at odd jobs in the higher branches of track work. Here the novice will be watched carefully by the boss, and if he makes a good showing he will soon find himself in command of his own gang.

After that, any advancement to which he can read his title clear is open to him, though it should be remembered that fewer roadmasters, general managers, and presidents than section-bosses are needed.

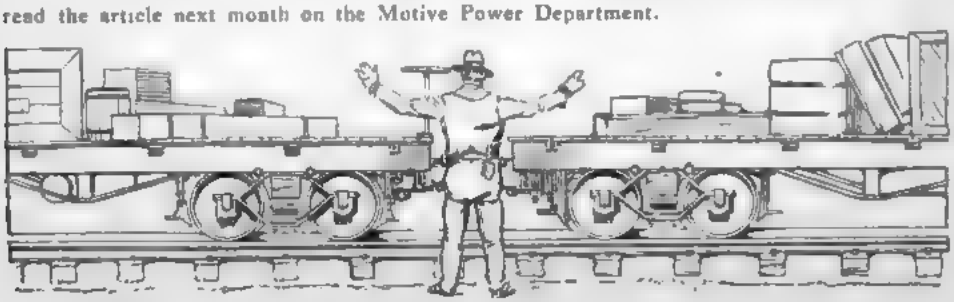
The superintendent of bridges and buildings plays a minor part in the maintenance of way. Although bridges and trestles, particularly those of wood, need a surprisingly large amount of attention, they do not require quite the endless reconstruction that the track demands. Even with the station structures, coal-sheds, water-tanks, and roundhouses on his hands, the superintendent of bridges and buildings can only contrive to get away with about one-sixth as much money as the roadmaster spends.

If the way-freight crew drops a heavy piece of machinery on the station platform hard enough to smash a plank, the "S. B. B." hurries a man from the other end of the division to replace it. If a water-tank shows signs of decay, or if the hostler runs an engine into the turntable pit, the same official is called upon to make repairs.

His men inspect the bridges and make frequent repairs to keep them up to standard. If half a dozen bridges or culverts are washed out in some sudden freshet or storm, it is the superintendent of bridges and buildings who rushes track pile-drivers, trainloads of material, and picked men to the spot, to toil day and night without rest until trains are running again over temporary trestles.

Men in this department draw double the pay of section-men, or more, and their positions are generally secure; but their activities are not the source of such anxious solicitude at headquarters as those of the section-gang, and their chances of distinction in more advanced branches of railroading seem to be rarer.

After the track is located and built and the section-men have taken their places along the line, it remains but to set the engines at work. If this seems a simple matter to you, read the article next month on the Motive Power Department.



Memories of the Old Engineers.

BY E. L. BACON.

NOT all the interest of railroading lies in thrilling tales of wreck and robbery and hairbreadth escape. Many are the small happenings of every day that shed light and color on the prosaic business of transportation, especially when they are viewed through the prism of a half century or more of experience.

Ripened recollection has a humor peculiarly its own and age adds a savor to life that nothing else can impart. Merely to be able to say, "I remember fifty years ago etc., etc." is the best beginning in the world, and to follow it up with tales, humorous or interesting in themselves, makes a combination hard to beat.

Veterans of the Erie Range Over Half a Century's Experience for Amusing or Tragic Incidents Which Have Lightened or Shadowed the Day's Work.

"SOMETIMES I'm surprised to find I'm still alive, considering all the close calls I've had in the fifty years I've been on the Erie," said Ed Black, as he watched his fireman getting up steam in old 521. "I have to pinch myself now and then to make sure I'm real flesh and blood, and not back on earth a second time as a wraith.

"But I guess I'm not a dead one yet by a long shot, though your nine-lived cats ain't in it with me. Many's the time I've thought it was all up with me; and back in 1873, when Twenty-Four ran off the switch on the Newark branch coming over the meadows, I'd have given nine hundred and ninety nine dollars and ninety cents for a thousand dollars' worth of life-insurance.

"When we went off, my fireman jumped just in time to save himself, but I was hanging on to the reverse-lever when the engine landed in a heap in a big hole in the meadows. The same second over comes the tank, tilting up on end, and I got a few tons of coal on top of me, and the whole tankful of water at the same time.

"The coal was bad enough, but the water came near drowning me. When they dug me out of that mess, only half conscious, the water had washed the coal right into my skin, and I was a first-class candidate for a minstrel show.

"But that wasn't half as bad a scare as the one I got in the Bergen tunnel. You know, it's as dark in there as the blackest night, even on a bright day. A man peers out ahead of his engine and can't see much but smoke, and sometimes not even the walls.

"Well, we'd got about a thousand feet into the hole when sounds came to my ears that I had never heard in there before. The whole tunnel seemed to be echoing with children's voices. For a

second I thought there must be something the matter with my brain, for who'd expect children in such a hole as that?

"Then I heard 'em again, shouting and laughing, and the same instant I got sight of 'em ahead of me. There must have been a dozen of 'em, and through the black smoke they looked like birds hopping about on the track.

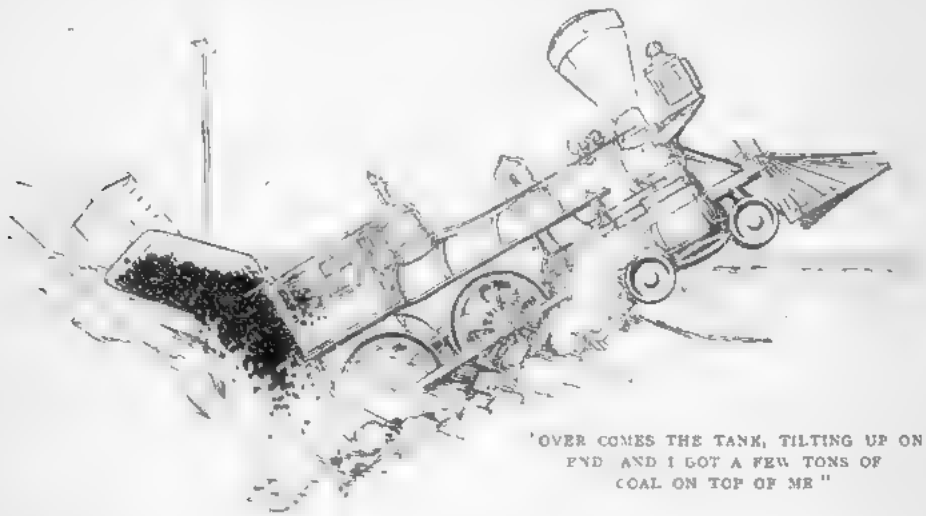
"I never want to have a nightmare as bad as that. Out in the open, where a man could see something, it wouldn't have been so bad, but down in that black hole in the smoke, with those voices ringing back from the walls, it gave my nerves the worst shaking they've ever had.

"I threw on the air, and we stopped in a train-length. When I looked out, there were children all around us, boys and girls, running and stumbling and crying with fright. Only one had been struck. He was a little chap, not more than five years old, and was lying with his face in a pool of water.

"He was unconscious, and we picked him up and put him aboard the train. When we got to the end of the hole, our baggage-master took him in his arms and ran with him all the way to the hospital. That baggage-master's quick run was all that saved the little chap's life, so the doctors said. As it was, they brought him around all right in a week or two.

"I've just rounded out half a century on the rails, but my railroad experience really goes back farther than that, for I was born and brought up in a railroad men's boarding-house in Paterson. It was run by my mother. The boarders were all engineers; and I can remember how, as a small boy, 'way back in the forties, I used to sit and listen to the stories told by men who were the first to run regular trains on the Erie.

"When I became an engineer myself,



'OVER COMES THE TANK, TILTING UP ON END AND I GOT A FEW TONS OF COAL ON TOP OF ME"

a good many of those boarders were still on the road. There was Ed Boyd and Al Gillingham and the Shiner brothers —Hank, Larry, Charlie, and Dan—and Hank Carloth, Bill Dooley, and Charley Fraser; all of them had taken me out riding on their old wood-burners when I was a little shaver, and they were still running engines long after I began. They're all dead now but one, Larry Shiner, and he's living on a farm down by Camden.

"Ever hear of Joe Quidor? I don't suppose so; it's only the old stagers that remember him; but he was a great card, Quidor was. A fine looking chap, and when he ran through the towns the girls used to wave at him. But he'd never give 'em so much as a look, for he wasn't a ladies' man, and never bothered his head about all the smiles they threw at him.

"I was firing for him before the War,

"THE NEXT SECOND THE AIR WAS FULL OF CORN AND PIECES OF CAR AND ENGINE.

and I remember how, when the pretty girls would try to catch his eye as we ran past 'em, he would turn to me and screw his wad of tobacco into his cheek and remark with a grin, 'All is not gold that glitters.'

"After I had left him, Quidor was coming east one day with Number One, when a grain-car ran out from the switch at Turner's. It was so close to him that there wasn't even time to jump, and Joe and his fireman squatted down behind the boiler and wondered whether there was a chance of their seeing any more of this world.

"The next second the air was full of corn and pieces of car and engine. Smoke-stack, bell, and cab-roof were cut clean off, but Joe and his fireman didn't get a scratch. They had cut clear through the grain-car without leaving the rails."

Retired, but Not Out of It.

Over in the Erie's yards, in Jersey City, a tall, stoop-shouldered, white-haired old man wanders about among the engines. He is Bill Mulvey, who must have run on as many railroads as any man in the country. He quit the road ten years ago, but he comes around every now and then to chat with his old friends on the Erie.

When I met Mulvey, he was talking about Lon Schiffey, who used to be his fireman on the Erie. Schiffey died a good many years ago.

"I never speak of Lon," said Bill, "without thinking of his black-eyed girl at Horseheads. "If you'd seen him when I first knew him, you'd never have taken him for a ladies' man He wasn't a bad-looking chap, but he was mighty careless about the way he dressed, and usually looked more like a hobo than anything else. But he changed his habits mighty sudden, and this was the reason

"One night we were pulling a freight past Horseheads, and Lon was hanging out of the cab, gazing at the scenery, though he couldn't see much outside the track of the headlight, for it was pretty dark. All of a sudden he lets out an oath, and stretches himself so far out of the cab he pretty near toppled off Then he began shaking his hand and waving his hat, and I got interested and took a look myself. Just for a moment I caught a glimpse of something white in the darkness, and instinct told me it was a woman

"'Lon,' I says, 'I'm astonished. To think of a steady-going, sensible man like you flirting. What's come over you? I've been running with you ten years, and never knew you to carry on like that before'

"'Did you see her?' he asks 'The

finest-looking girl I ever saw in my life. You'd ought to have seen her that second the headlight shone on her. Pretty? Oh, my!'

"'Well, let me give you a piece of advice, Lon,' I says. 'If I was you, before I started in trying to impress the ladies, I'd get a shave and a hair-cut, and take a wash now and then. I don't suppose you're a bad-looking chap down underneath the coal dust and the stubble; on a dark night like this you might pass, but wait till she gets a look at you in daylight.'

A Dandy in an Engine-Cab.

"My words took root, all right, for the next night he come around with the shave and the hair-cut, and looking as if he'd just stepped out of a bath-tub. What's more, he had a celluloid collar and a red necktie. It was the first time I ever saw him with a collar, and he looked kind of embarrassed.

"He'd certainly got it bad. He was all in a flutter, and before we got to Horseheads that night, he hardly said a word. The stars were out and the moon was up, and when we got within half a mile of the place where he'd seen the girl, he was stretching himself out of the cab and reconnoitering the landscape, like a farmer taking his first ride down the line.

"I wouldn't have bet much on his chances of seeing the girl again; but, by George! she was there, in the same spot. Just a second she showed in the glare of the headlight, and another second waving at us from behind, and that was all, but it was enough to make Lon the happiest man on earth.

"'She got it!' he yells

"'WHAT'S YOUR NAME?' SHE HOLLERS, AND HE YELLS IT BACK AT HER."

"'Got what?' says I.

"'The letter,' he says. 'You didn't think I was going by again without leaving some word, did you?'

"'Better get some new clothes, Lon,' I told him. 'In this lightning courting everything depends on looks.' And again he takes my advice, though I hadn't expected he'd tog himself out quite so fine

"For a minute I thought I had 'em when he turned up for the next run. He was wearing a black Prince Albert coat, and in his red necktie there was a plate-glass diamond as big as the end of your thumb. It was the first and the last time I ever saw a man firing an engine in a Prince Albert coat

"'Bill,' he says, 'you got to stop to-night. Just for two minutes. That's all I ask.'

"I SAW HIM PULL THE STILETTO THAT HE CARRIED IN HIS SHIRT AND SLASH THE SNAKE WITH IT."

Courtship While You Wait.

"It was risky, but I did it. I didn't have the heart to refuse. She was there, all right, waiting for him, and that coat and diamond must have made a big impression on that simple little country girl. I could see 'em standing close together, 'way out in the shadows, until I blew my whistle for the break-away, and then Lon comes running and jumps aboard with a grin all over his face. He's no more than in the cab than she comes flying after him.

"'What's your name?' she hollers, and he yells it back at her.

"'I'm going to be married,' says Lon, after we'd run out of sight of her 'It's all fixed for this day week'

"That's how Lon Schiffey came to get his wife, and she made him a good one. I guess some of the old fellows on the road can remember her to this day. A little black-haired, black-eyed woman she was then; but the last time I saw her she was getting old, and her hair had turned snow-white. She's dead now."

One of the men who used to fire for Ed Boyd back in the fifties was "Little Davey" Dunkle. He is "Old Dave" now, and he hasn't been running on the road for a dozen years, but there is little he doesn't know about any of the big railroads of the country. Dave Dunkle began as a fireman on the New Haven road when he was sixteen years old, and

since then he has run engines through almost every State in the Union. In the seventies he drifted to Peru, and was an engineer on the railroad running up from Callao.

"Great Snakes!"

"It was while I was railroading in Peru," said Dunkle, "that I fell in with Eli Kenyon, who was running an engine on the same road. Most of the engineers down there in those days were German or English, and the firemen and train-crews were mostly Portuguese, so the fact that we were pretty near the only Americans in sight made us chums.

"We began to get sick of the country before long. There was so much fever that a man didn't dare stay out nights, and, besides that, there were more kinds of unclassified dangers than you could count in a week. One day I stopped the engine out in the woods and my fireman—half Indian, he was—got off to get a drink at a spring. He hadn't been gone two minutes when I heard him shout, and, looking out through the trees, I saw him with a giant anaconda twisting itself around him.

"I picked up the shovel and ran for him, and while I was on the way I saw him pull out the little stiletto that he carried in his shirt and slash the snake with it again and again. There wasn't any need of my help. The snake was slashed all to pieces before I got there, and the fireman wasn't hurt a bit, although the breath had been pretty near squeezed out of him.

"That anaconda business and the fever settled Peru for me, and I persuaded Eli to dig out with me for the home country. We came up to the B and O, and got jobs running engines, and after a year there we went West. We bummed it for nine years, running engines on at least a dozen roads.

"I was in a train robbery on the Missouri Pacific thirty years ago, and a masked man held a gun at my head for fifteen minutes. There were half a dozen of 'em in the gang, and they got away with a good deal of swag—a few hundred dollars from the express-car, and a lot of stuff from the passengers.

"After those nine years of bumming around, Eli and I drifted onto the Erie. Up at Elmira we fell in with two sisters, and began to think of marrying and settling down, not that we cared much about settling down, for there's nothing like bumming round the world, care-free and easy; but we'd met our fates. I had, at least, and I've never been sorry for it.

"We used to have different days off, and we could never go courting at the same time. One night he comes to me and says: 'Dave, I don't believe my girl's going to have me. I can't ever get her alone. She's always quitting the room and leaving me with her sister.'

Wires of the Wooers Crossed.

"I told him I knew better; that my girl had told me her sister thought the world of Eli. But he says: 'No, that can't be. She don't treat me half so well as her little sister, and I guess she don't want me.'

"I pricks up my ears when he says 'little sister.'

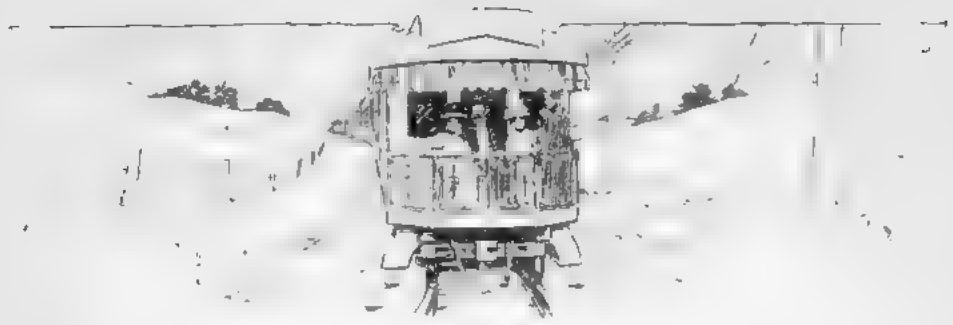
"'Which girl are you after, anyway?' I asks.

"'Why, the older one, of course,' says he. 'Didn't you know?'

"You could have knocked me over with a feather. That older one was my girl, and she and I had thought all along that it was the little one that Eli was after. Then I told him the truth.

"He held out his hand to me and says: 'It's all right, Dave. It's just a mistake, that's all. We'll forget it.'

"But I don't believe he ever did forget it. He never married, anyway, and the next year he went back to South America and got the yellow fever and died. Both the girls are dead now, too—my wife and her sister. Did the little one ever marry? No, she never did."



AT BAY ON THE LIMITED.

BY JOHNSTON McCULLEY,

Author of "Richard Hughes—Railroad Detective," "Land of Lost Hope," "Shipmates With Horror," Etc.

The Opposing Forces Clash at Cañon Diablo and Right Wins "Palms Up."

CHAPTER XVII.

What Happened at Winslow.

I WAS still awake when we arrived at Winslow. Here was where Sadie Wright was to expect trouble, unless the mysterious person who sent the telegram erred. And the trouble was to come from outsiders, he had said.

When the train came to a stop, I sprang to the platform and walked forward until I stood directly beneath the window of Sadie Wright's drawing room. According to the road's schedule, we were to stop at Winslow only ten minutes. The ten minutes passed quickly, locomotives and crews were changed, and the limited waited.

"What's the delay?" I asked a brakeman who hurried by.

"Freight stuck between here and Moqui," he said. "She'll be in, I guess, within half an hour. Something mysterious about it—rail torn up, or something like that. The section-crew is working at it. Somebody'll get particular fits for laying the limited out."

He went on about his work, and left me wondering whether there was really a mystery about the missing rail. Had it been removed in the hope of causing a small freight wreck and thus delaying the limited? I remembered what Sadie Wright had told me—that her foes would try first to get possession of what she carried, and, failing in that, would try to delay her as much as possible.

Everything seemed quiet about the train. I saw Clark, Miss Kittredge, and the man who limped; they were walking up and down the station-platform in quite a natural manner, as though they had absolutely no interest in Sadie Wright. I confess that I was a bit puzzled by their behavior. I had expected violence of some sort, a last stand, a final great attempt to win.

As they passed me, Clark nodded and I beckoned to him. He left the others and stepped to my side.

"Why did you speak as you did in the dining-car?" I demanded.

"Oh, that was just a bit of the

game!" he laughed. "Does she think you're one of my crowd?"

"She does not know what to think," I replied. "She suspects me, of course, to such an extent that she cannot trust me further in this business—cannot allow me to help her. But I want you to understand that I am keeping my eyes on her, just the same, and I'll take a hand in the game as soon as it starts."

"The more the merrier," commented Clark.

"I thought you were going to do something rash at Winslow," I said in a taunting tone.

"We are still at Winslow, my friend," he said.

"But we'll not be here long, in spite of the rail your friends took up," I said.

He was standing with the light shining directly upon his face, and I could see that he flushed at my words. The speech had gone home.

He looked me in the eyes for a moment, then turned and walked slowly away, rejoining Miss Kittredge and the other man at the end of the platform.

I glanced up at the drawing room window; the curtain was drawn, and everything seemed quiet inside the car. I walked down the platform a little way to ask some of the railroad employees more about the trouble ahead.

When I returned, Sadie Wright was standing on the steps of our car, talking to the porter on the platform below. He was explaining the cause of the delay. She looked past me, as though I was a total stranger. A pain tugged at my heart, and I went on without looking at her again. When I turned at the end of the platform, I noticed that she had descended and was walking back and forth.

I stood with my back to a post and watched her. Miss Kittredge and the man who limped were at the end of the platform opposite to Sadie Wright. Clark was not to be seen.

As soon as I noticed that, I began to look for him. I wanted to keep my eyes on him. But he was not on the platform, nor in the station, unless he was at the lunch-counter or in the telegraph-office.

I decided to enter the building and continue my search for him, but before starting I glanced toward Sadie again. She had reached the end of the platform and had turned toward the long, low station building. She was walking back toward me, near the wall.

I watched while she passed a dark spot between two sections of the building—a place where an open court allowed passengers to pass to the other side of the station without going around or through the building.

My eyes were upon her as she stepped into the shadow. A second later I saw a man beside her; he had come from the court. Another second and he had thrown one hand across her mouth, grasped her, and dragged her back into the court.

I sprang forward without uttering a cry. I was at the entrance to the court in a few seconds, and glanced through the dark space to the other side where it was light and a wide avenue led up to the town.

Sadie Wright and her abductor were not in the court, and when I ran through I could not see them in the street. Half a dozen men stood on the other side of the station-building, and these I questioned hurriedly.

Nothing came of it. She had been seized and carried into the dark court, and evidently she had not emerged on the other side with her captor.

I ran back into the court. On either side of it was a single door. One led to the main waiting room, and I decided immediately that her abductor had not carried her there. The other was locked, and appeared to lead into some sort of storeroom.

As I stood there an employee walked through the court. I pointed to the locked door.

"Is this the telegraph-office?" I asked.

"Telegraph office is at the other end of the building," he answered. "That's a storeroom for supplies."

There was my question answered. It was a storeroom, and the door was locked. The windows were barred, as such windows generally are, and there was no light within. The abductor surely had not taken her there. And he had not crossed to the street, nor gone into the main waiting-room. Where, then?

I ran back to the platform. Clark had rejoined Miss Kittredge and the cripple, and they were walking up and down as before. To make sure that there was no mistake, I went into the station again, looking in vain for her. Then I boarded the train and walked from one end to the other, still in vain. The freight train which had delayed us was entering the yards. The limited would start in a few seconds.

I ran back to Clark, and faced him.

"One of your scoundrels has abducted Miss Wright," I said. "I'll give you one minute to produce her."

"My dear Mr. Berthold," he began.

"One minute!" I exclaimed. "If you do not—"

"Well, if I do not?" he said. "I have been walking on the platform every minute since the train stopped, except when I was at the lunch-counter, and Miss Kittredge has been here also."

He did not mention the cripple, and it was not necessary, for I had seen the cripple talking to Miss Kittredge at the time Miss Wright was seized.

"You are beside yourself, sir," said Clark. "I cannot help it if Miss Wright has disappeared."

They were giving the signal for passengers to go back to the train.

"Tell me where she is! Get her back to the train!" I demanded.

He started to walk toward the train, the others following.

"You talk nonsense," he said. "Miss Wright is a peculiar person, as I told you before. She is probably up to some game. Perhaps she ordered herself abducted. It is none of my business. I must go on to Los Angeles on this train. If you wish to stay and search for her, do so, by all means."

He had reached the steps. As I watched, he mounted them and stopped in the vestibule to look back at me and smile that mocking smile of his. His words had caused me doubt. Her disappearance had been so complete—perhaps she *had* engineered her own abduction.

That would explain the mystery, for once in the dark court, after the man had made a pretense at abducting her, she could have released herself and walked calmly into the waiting-room and through it into the street, while he went in the other direction. Perhaps it was a part of the mysterious game.

The abductor might be her friend, her helper, and she might have ordered the appearance of an abduction to create some certain effect. Perhaps she wanted me to stay behind at Winslow to look for her. Then she could slip out of town quietly and leave me behind. It might be only an artistic way of "shaking" me because she had come to doubt my sincerity and honesty.

Then I remembered that telegram of warning, and knew that such thoughts were nonsense. Besides, she had told me everything depended on her reaching Los Angeles at the earliest possible moment, and that meant on the limited. Yes—she had been abducted forcibly, and was being held against her will. I alone could save her.

The conductor of the limited shouted "All aboard!" and the train began to move. Clark was still in the vestibule, smiling down at me. The cripple had gone on into the car. Miss Kittredge stood on the platform beside the steps.

"Aren't you coming with us to Los Angeles, Mr. Berthold?" Clark asked.

"No!" I said firmly. "I stay to undo the work you have done."

"I wish you luck," he said. Then he turned to Miss Kittredge. The train was beginning to move. The porter put out a hand to aid Miss Kittredge to step up.

"Hurry, Miss Kittredge," Clark said.

She stepped back. "I'm not going with you," she said, her face white.

"What do you mean?" he cried.

"That I'm done with you!"

"You—"

But she turned away and walked toward the station. The train was gathering speed. For an instant Clark appeared on the steps, his face purple with rage, as though undecided whether to go on or to step off. He decided to go on.

CHAPTER XVIII

Miss Kittredge Gives a Warning.

IN my astonishment I watched the departing limited until the observation-platform was only a speck in the distance. Then even the lights disappeared,

as the train rounded the first curve, and I turned toward the station-house. For the second time since leaving Kansas City I was separated from Sadie Wright, and this time the separation was more complicated

Miss Kittredge had walked but a short distance from the track, and now stood beside the building. I hurried up to her

"Why did you stay?" I asked.

"To help you—and Sadie Wright."

I looked at her and smiled.

"And you expect me to believe that?" I said. "Why don't you admit that you remained behind at Clark's orders to watch me, to try to keep us from going on?"

She turned upon me like a tigress.

"Listen!" she commanded. "No matter how it appears to you, this is the truth—I stayed to help you, to help Sadie Wright, if I can. That man Clark—"

She stopped for a moment, anger overcoming her. Presently she went on:

"I've done everything for him. I have been the brains, not Clark, yet he has received the credit. I stood for his blunders—for everything. And then he pointed me out to the officers at Syracuse—"

"So that's the reason," I said.

"Isn't it reason enough—to humiliate me, force me to prove I was not Sadie Wright, force me to make a show of myself catching the limited again? He ought to have been clever enough to have dodged it. I spoke to him about it. He replied that Sadie Wright forced him to point me out. Bah! If he had been a man—"

"She did force him," I replied.

"But that's not all," Miss Kittredge continued. "After I caught the limited, he insulted me."

"Oh!"

"Not personally, as a masculine brute may insult a woman," she hurried on. "He insulted me professionally. You don't understand, I suppose, for he says that you are helping Miss Wright without knowing just what she is doing. Let me tell you our profession is dangerous, our rewards are large, therefore there is much professional jealousy.

"He insulted me—insulted my ability—after I had made a reputation for him with my brains. He got this assignment, and thought he could win out if he had me for an assistant. And now I hope he loses.

"If I had been in command, it would have been a different story. I'd have got the best of Sadie Wright before she reached Kansas City. But he—he blundered. He allowed her to conquer him at Chicago, again at Kansas City, and times without number on the train."

"All this is worse than Greek to me," I said. "Remember, I know nothing of the mission upon which Miss Wright is engaged. I am helping her merely because she was a woman in trouble when I met her and needed my help."

"I forgot," she said. "You'll understand soon, no doubt. But let us do something—let us help her!"

"We must find her first," I said.

"I know their plans," Miss Kittredge replied. "She was to be detained here at Winslow, and Clark and his companion will make a last search in her drawing-room for—"

She stopped.

"For?" I questioned.

"I forgot you did not know," she said.

"Can't you tell me?"

"Not if Sadie Wright hasn't."

"Maybe I could do more to help her."

"No, I cannot tell you; it wouldn't be right. You haven't the least idea about this business, it seems. It's as much to their interest for Sadie Wright's enemies to keep it a secret as it is for her. We must find her—and help her."

"If she'll let us," I answered. "She thinks I am in league with Clark at least, I am under suspicion."

"I know," Miss Kittredge replied. "That was a dirty trick—one that a person who had any regard for the profession would not have attempted."

"Still, it had its effect," I said. "I'll help as much as I can. But if she sees us together, we'll never be able to make her believe we are working for her. She'll be convinced that we are against her."

"I know she will. Especially since one in our profession rarely turns to help an enemy. But—well, it doesn't make any difference whether it is professional or not. I quit the profession after this."

She started to walk toward the dark

court. Several men near the station, who had noticed that we had left the limited, were watching us. I started after her, intending to urge that she pass through to the street, where we could discuss the affair and make our plans without being subjected to the stares of the hangers-on about the depot.

But as we reached the dark court, we came to a dead stop—for Sadie Wright had come from somewhere in the darkness and was standing before us.

"Sadie!" I cried, stepping toward her.

She looked me straight in the eyes, glanced at Miss Kittredge, and laughed lightly.

"So you have decided to be an open, an honest, enemy?" she asked.

"What do you mean?" I said. "I am here to help you—stayed behind for that purpose. Miss Kittredge has had a falling out with Clark, and is here to help you, too."

"You expect me to believe such a story?" she asked

I started to reply, but Miss Kittredge pushed me to one side and stepped forward.

"Listen to me, Sadie Wright!" she demanded. "I realize how utterly foolish and untruthful it sounds, but it is true. I have quit the game, as far as Clark is concerned. I'm ready to help you fight him

"I know that you'll not believe this; that you think Mr. Berthold is against you because of what Clark said in the diner; that you think we are attempting a trick now—but I swear to you that both Mr. Berthold and myself are your true friends. Of course, you'll not believe this—you're afraid to believe it and take chances.

"And so the only way for you to do, the only way for us to prove our sincerity, is for you to go ahead as though you were alone in the matter and allow us to go our own way. We'll be near you, if we can, and if the chance presents itself we'll help you and prove our friendship. You have every right in the world to doubt me, but you are wronging Mr. Berthold.

"He doesn't even know the nature of the mission upon which you are engaged. He aided you at his personal risk when you first met, and he still wants to help you."

Sadie Wright's expression changed, but there was still a gleam of suspicion in her eyes.

"If I am wronging Mr. Berthold," she said, "I am truly sorry. But you, Miss Kittredge, who are acquainted with my mission, surely realize that it is of such importance that I can take no chances If future events prove that both of you are on my side, I will do everything in my power to atone for having wronged you. Until then, I shall play my own game, without the help of any one."

"We'll be near you, ready to prove our loyalty," said Miss Kittredge.

"Of course," Sadie replied, "you are at liberty to do as you please. But do not come *too* near!"

"We appreciate your warning," said Miss Kittredge. "And I, who am acquainted with the facts, appreciate your position"

Sadie Wright started to walk down the platform.

"Just a moment," I said. "Tell me how you disappeared when the limited was here. I looked everywhere for you."

"I'll tell you—if you don't know," she answered. "I was seized and taken into that dark storeroom there."

"But they told me the storeroom was locked!"

"It was," she replied, "and I was on the inside. The person who took me there seemed to have a key."

"A railroad man!" I cried.

"No," she said; "railroad men are gentlemen—especially where patrons of the road are concerned. It was not a railroad man, but he had a key. Certain railroad men will be surprised in the morning when they enter the storeroom for supplies. They'll find a man bound and gagged on the floor—a man who will be unable to explain himself and his presence there."

"You did it? But how?" I asked

"He was a dull fellow," she replied "I got the drop on him, and he showed no courage. He was bound before he realized what was going on. A blow on his head from the butt of a heavy revolver—"

"And he didn't cry out?" I said.

"He certainly did not. You seem to forget that he didn't care to have any one hear him, any more than I did. I locked him in when I came out just now. And when they find him—well, he'll not be able to tell the truth about himself, and he's liable to have a hard time explaining his presence there satisfactorily. He can't fool railroad men with the first story that comes to his mind. Railroad men, as a general rule, are pretty wise."

"What are you going to do now?" I asked.

"You forget, sir, that I look upon you as an enemy."

"But, Sadie—"

"However, I can tell you that much I'm going to catch the limited again."

"A special?" I gasped, remembering Miss Kittredge's feat.

"A locomotive, at least," said Sadie Wright.

She left us and hurried along the platform toward the offices.

"What are we to do?" I asked, turning to Miss Kittredge.

To my wonder, Miss Kittredge's face was white.

"Why—why—" I began.

"She's going to walk into a trap!" she said hoarsely. "I was afraid of it."

"A trap! What do you mean?"

"Clark expects her to follow on a special. He'll be waiting for her—at a place where there'll not be a train-load of passengers around to prevent him from accomplishing his purpose. Clark is desperate. He'll do anything to gain his end. He'll not play fair—he'll break every rule of the game."

"But—"

"We must save her!" said Miss Kittredge.

"Can't you explain? Do you know their plans?"

"Yes—I know everything. Clark and his companion will search her drawing-room again; then, at a certain place on the road, they will leave the train. They'll wait for her on the special. Then—"

"They'll wreck it!" I gasped.

"No. They don't want to kill Sadie Wright. They want to get possession of something she is carrying. They'll not wreck her, but they'll stop her, get her in their power."

Already I was leading the way along the platform, following Sadie Wright.

"She won't let us go with her," I said, "and she won't let us keep her here. If she has made up her mind to follow the limited, she'll do it."

"Yes—she will. I know Sadie Wright."

"Then?"

"We must follow her," said Miss Kittredge. "Where one special goes, another can follow."

"You mean to follow her special on one of our own?"

"Exactly—and keep as near to her as the rules of the railroad will allow."

"Can the limited be caught?" I asked.

"It can," she assured me. "From Winslow to Flagstaff its time is slow, because of the nature of the division. It is fifty-eight miles, and the schedule is a little over two hours. A locomotive can surely beat that. But there is no time to be lost. Let's pray that there'll be no delay in getting an engine and a crew to run it."

We had reached the offices, and I threw open the door and stepped back for Miss Kittredge to enter. Sadie was there concluding arrangements.

"In five minutes, then," I heard her say. Then she passed us on her way out.

"This gentleman and myself have to catch the limited," Miss Kittredge began, facing the railroad official.

"What? You, too?" he said, laughing. "That other lady wants to do the same thing. What on earth—"

"The reason is immaterial," said Miss Kittredge. "We want a special locomotive to catch the limited, and we have the money to pay for it. We'll try to catch it at Flagstaff. You are here, I suppose, to attend to the business of the road?"

"I meant no offense," said the official quickly. "I was merely expressing my surprise at so many of you being left behind. Early to-day some one was lost back down the line and caught the limited with a special."

"I know," said Miss Kittredge. "That was myself."

The official was about to express his surprise again, but he did not when he looked into Miss Kittredge's face.

"A special to Flagstaff," she said. "Do we get it?"

"Certainly."

"A locomotive will do."

"It'll have to do. There's nothing else."

"How soon can we start?"

"The other lady is first out. She leaves in a few minutes."

"Can't we follow her?"

"Just as close as the law allows," said the official courteously. "In fifteen minutes, say."

"One hundred dollars for yourself and fifty each for engineer and fireman if we start in seven instead of fifteen minutes," said Miss Kittredge.

I kept in the background. This was where money talked.

"In seven minutes," the official promised. "Just wait a moment."

He gave the orders quickly, then turned to us again, figured the cost, and gave Miss Kittredge a receipt for the money she handed over. I wasn't in the game at all, and I was too wise to spoil it by intruding. I could pay my share, I thought, after we were once on the way. Now every minute was too valuable to talk of money.

We went out on the platform again, and stood there waiting. Sadie Wright was not to be seen. Presently the official came to us

"I can give you one car, if you three people will ride together. I'll ask the other lady, if you say so."

"We'll take our own locomotive, thank you," said Miss Kittredge.

So that was settled. I had expected the official to think of it before, but he did not urge this course. It was none of his business if we didn't care to ride with Sadie Wright or she with us. And two specials meant two rolls of bills for the road

In a few minutes a monster locomotive slipped down alongside the station and came to a stop. Then I saw Sadie Wright emerge from the waiting-room with a package in her arms—something to eat, I suppose. She started rapidly toward the locomotive.

Miss Kittredge crossed the platform to her. I heard distinctly what she said.

"We are your friends, though you will not believe it. We'll be right behind you, if you need help. You're running into a trap. Beware the Cañon Diablo."

CHAPTER XIX.

Over Cañon Diablo.

I'LL never forget that ride across the Arizona desert. The shriek of the locomotive's whistle as Sadie Wright was hurried away, the shriek of another as we started after her, the rocking cab, Miss Kittredge sitting behind the engineer, I upon the fireman's seat, the fireman hurling coal into the fire box, watching the gage—I can never forget it.

Sadie Wright's special was out of sight around a curve as we cleared the Winslow yards and started on our wild run across the country. Miss Kittredge had explained that she wanted the other locomotive kept in sight as nearly as possible, and had offered certain inducements Already she had given the crew the reward she had promised if the locomotive started by a certain time

It is twenty-six miles from Winslow to Cañon Diablo. We covered the first ten without catching sight of the locomotive ahead of us. Then we reached the top of a grade, and far below us we saw it, saw a red flash against the sky as the fire-box door was opened, saw a shower of sparks leap from the stack and illuminate the night.

"We're gaining on her," Miss Kittredge shouted to me, and I nodded.

Another five miles, and the engineer slackened speed a little.

"We're as close to her as the rules allow me to run," he explained. "I'll try to keep this distance. It wouldn't take us more'n a few seconds to run up to her if she stopped. We have to observe the rules, you know."

"Couldn't you get a little closer if it was worth while?" she asked

The engineer turned for an instant and smiled at her.

"If we got any closer, and the man on the other engine pulled her down quick, we'd be into them before we'd have time to say our prayers. We'll just about do where we are now." His words were shouted in gasps above the roar of the engine.

"Do you think we'll catch the limited at Flagstaff?" I yelled at the fireman.

"Ought to," he shouted back, and bent to his shovel.

The whistle shrieked again, and we shot through Dennison. It was only six miles to the cañon now — a matter of seven or eight minutes. We whirled around curves, through cuts, over high bridges, crossing the rough country at a pace that meant a risk every fraction of a second. Again the engineer slackened pace. The nature of the road demanded it

And then we reached the great curve through the cut at the approach to Cañon Diablo. The cañon itself is the Grand Cañon in miniature—a deep slash in the earth, spanned by a high steel bridge, a place where the average passenger holds his breath as the train creeps across.

We swept from the cut, around the last bit of curve, and the long high bridge was before us. On the bridge, midway across, standing still, a white cloud of steam enveloping her, was Sadie Wright's locomotive. In the moonlight we could see dark forms surrounding it, could hear voices raised in anger as our own locomotive drew to a stop, heard a woman's scream, sharp and shrill.

"Go on! For pity's sake, go on!" Miss Kittredge cried.

"What is it?" the fireman gasped. "Hold-up?"

"Yes—yes!" Miss Kittredge cried. "Don't stop for explanations! Go on! Help her! They'll carry her away, if you don't!"

The engineer worked the throttle slowly out, and we crept toward the other locomotive. We were almost upon it, when a man standing in the middle of the bridge fired at us pointblank with a revolver.

"Get down in the cab!" the engineer cried to Miss Kittredge

I looked at the fireman; he had a revolver, too, and it was in his hand ready for instant use. We crept forward again, and a shot crashed through the window in front of me. I, too, got down into the cab.

Another shot broke the window in front of the engineer. Then our locomotive stopped, within a few feet of the other.

"Careful," the engineer warned.

The fireman left the tender and dropped to the string piece at the side of the track, shielding himself as well as he could as he made his way forward. There were two more shots. One flew over our heads; the other was from the fireman's revolver

"Got him," said that individual curtly.

I glanced past him. In the middle of the track a man's body lay across the ties. There was a battle raging in the cab.

The duelists were Clark and one of the enginemen.

The fireman darted forward, and I followed. Behind me I heard the engineer crying to Miss Kittredge to stay where she was. We reached the tender of the other locomotive, the three of us, and crept behind it.

I took one side, the fireman the other, and the engineer went straight over the tender. Thus we advanced to battle.

We reached the cab at about the same time. On the floor was huddled the fireman, and across his body lay Sadie Wright, her clothes torn, her beautiful hair falling in a mass about her shoulders.

I sprang into the cab with a shout. Clark turned and saw me, and with a curse he left the engineer and sprang toward me. The engineer was weak from the fight—he reeled against the side of the cab and watched us through dimmed eyes

Clark reached me, grappled with me, and tried to throw me from the gangway I knew what that meant. Below me was empty air for five hundred feet, and then jagged rocks—and death. The advantage was with Clark, for he was above me

I fought him with every muscle. He kicked at my hands, trying to make me let go. My knuckles were bleeding. I was unable to climb into the cab. Once he swung his foot at my face, but I dodged

And then the injustice of it came over me—the unfairness of such a fight after all that had taken place — and like a demon I drove my way into the cab in spite of his resistance. He rushed at me and threw his whole weight upon me. I tottered back. A cry escaped my lips. I

felt myself falling, felt him give me another push, put out my hands in vain to grasp something that might save me.

And then, as I felt myself going, as I closed my eyes and my lips moved in prayer, a hand grasped me by the shoulder and whirled me around so that I fell safely to the floor of the cab. Then some one fell upon Clark from the rear and hurled him against the boiler-head.

The engineer, climbing over the tender, had arrived in time to save me; the fireman was taking care of Clark.

I dropped to my knees beside Sadie, crying to her to come back to life. I thought she had been injured, but I was wrong. She had fought to the point of exhaustion, and as I spoke to her she sat up with my arms about her

"You're safe, Sadie!" I cried. "It's all right—everything is all right!"

Clark was on his feet again, leaning against the side of the cab, the engineer and fireman standing before him to prevent his escape. I helped Sadie to her feet, and she faced him.

"He—has it!" she gasped weakly. "He tore it—from my hair."

I realized in an instant what she meant.

"You brute!" I cried, springing toward him.

The engineer and fireman stood aside to let me at him. They were men, with a man's sense of fair play and vengeance, each of them. Before he knew my intention, I had him by the throat and was choking him, forcing him backward, downward. I never knew my real strength until then.

"You're — breaking—my—back!" he gasped.

"Give it to me!" I cried.

"Yes—yes! Here!"

I released him, but kept an eye on his hands. He felt in a pocket and handed me a small roll of paper.

"Here," he said.

I handed it backward to Sadie Wright, and she took it with a glad cry. Then I let Clark stumble to his feet.

"You cur!" I said. "You tried to kill me! You tried to throw me into the cañon. I ought to send you over—"

The engineer of Miss Kittredge's special put out a hand and forced me backward.

"No," he said gently. "There's something worse than that in store for him. A man don't hold up a train or an engine these days without suffering for it. Let the road handle him. He'll spend a good part of the rest of his life in jail."

"I don't want to prosecute him," said Sadie Wright suddenly.

She looked at me. I knew what she meant. For some reason, the same reason that had forced her to do so many peculiar things, she could not appear to give evidence against him.

"The lady cannot be bothered by the notoriety," I said. "That is what she means. She can't wait in Arizona, you see, for the trial."

"That won't be necessary," spoke up the engineer. "My word and the word of my fireman will be enough. And these other enginemen, too—"

"In that case," I said, "you may do as you please. I suppose you'll have to prosecute, especially since you've wounded his companion. One of you had better look after him. The three of us can go on after the limited in this locomotive, and you can take the wounded man and prisoner behind us in the second."

I glanced at Sadie. There was gratitude in her eyes. It pleased her to think that I should remember the urgency of her mission even at such a time.

"That will be satisfactory," she said to the engineer. "The man wanted to rob us evidently. He got nothing from me except an unimportant paper, and I have that now. I suppose he heard I had been left behind at Winslow, and thought I'd follow on a special. He thought I carried jewelry, perhaps."

"But how—what—" began one of the firemen.

"Never mind," I whispered to him quickly. "The lady is nervous."

He nodded his head understandingly.

"He got nothing but the paper," repeated Sadie, leaning weakly against the engineer's seat; "and as I have regained that—"

"Are you sure you have regained it?" put in another voice.

It was Miss Kittredge; she had reached the locomotive by coming across the bridge. Now she stepped up quickly as Sadie looked at the roll of paper.

"The seal—not here—" I heard her gasp.

In the next instant she was before Clark again.

"This isn't what you took from me!" she cried.

I saw his arm come forward as his hand came up out of his pocket. I saw another roll of paper in his hand, saw him raise it, and realized what he meant to do. The bottom of Cañon Diablo was hundreds of feet below. If he hurled the paper into the cañon, it could not be found until daylight, if then, and Sadie Wright's mission would fail.

Sadie cried out as I sprang past her and grasped his arm. The paper dropped, fluttering, but Miss Kittredge caught it. It was the moment for the supreme test. If Miss Kittredge had been playing her game, too, she could accomplish the work Clark had started. But she turned with a smile and handed the paper to Sadie Wright. I saw a great red seal around it.

"I trust you believe me now, Miss Wright," said Miss Kittredge.

CHAPTER XX.

The Game Ends.

FIVE minutes later Sadie Wright, Miss Kittredge, and myself were flying over the road again in the locomotive which had left Winslow with Sadie Wright as sole passenger.

While I sat beside the engineer and watched the track with him, Miss Kittredge helped Sadie to rearrange her hair and mend the tears in her clothing. Sadie's spirits had returned, and she was laughing and joking and speculating on what would have happened if we had not been following her in another locomotive.

Her special had stopped because of a red lantern, she said, and in an instant Clark and the other man had appeared and pointed revolvers at their heads. The fireman had grappled with Clark and had gone to the floor from a blow in the face. Then Clark covered the engineer with his revolver and started to fight Sadie, demanding that she give him what he sought, and tearing it out of her hair when she refused.

When our engine had approached, the other man had gone back to fire at us and keep us off. Sadie managed to wrench Clark's revolver from his hand and hurl it into the cañon. Then the engineer sprang to her assistance, Sadie's overwrought nerves gave way, and she sank to the floor of the cab beside the fireman.

The fireman was doing his duty now, but he was still suffering from the blow and his face showed the result of it. It had been a stiff fight all around, but we had won.

And now we were fighting again—fighting against time. Our delay at Cañon Diablo had placed us where we were when we left Winslow—fifteen minutes behind the limited. But we were eating up the miles now, sweeping through the cuts and around the curves. At Cosnino, ten miles from Flagstaff, we caught a glimpse of the limited far ahead. Then a butte shut off the view, and we could only hope that we were gaining.

We rounded a curve and swept onto the tangent, and Flagstaff was before us, the lights of the town glittering in the distance. The limited was at the station. Our whistle shrieked again and again.

"I believe they're holding her," the engineer cried.

And they were, but not for us. Inspectors had discovered a minor defect in a wheel, and a car was being cut out. We dashed alongside, there were hurried words of thanks and appreciation, Miss Kittredge slipped some bills to the engineer and told him to divide with the fireman, and we dropped to the ground.

"You've done more good than you think," Sadie Wright told the crew. "I'll not forget it."

In another minute we were giving a porter the surprise of his life. It was early morning, and none of the passengers was up in our car. Miss Kittredge went into Sadie's drawing-room, and I bade them good night and went to the smoking-compartment.

I bathed my face and hands and plunged my arms in the refreshing water. Then I sat down for a comfortable smoke. I wasn't ready for sleep—I wanted to think.

The next thing I knew, the porter was awakening me and intimating that I'd rest better in my berth. It was almost ten o'clock when I left my section and went to the wash-room. My head ached and my muscles were sore, but my heart was full of song, and some of it crowded to my lips

"Little happy this morning?" asked a fellow passenger. "I was looking for you last night to play cards, but I couldn't find you."

"What time?" I asked brazenly.

"About midnight. I couldn't sleep, and I thought you might be up, too."

"At that time," I said, "I was walking up and down the platform at Winslow, and you were on the limited tearing across the map. Now we're together again. Figure it out."

He left me, not to figure it out, but to remark, I suppose, on the peculiar sense of humor some people possess.

When I was dressed and felt a little better, I went to the drawing room. Sadie and Miss Kittredge were not there. So I went to the diner for breakfast, and there I found them.

They had just finished the meal, and though Miss Kittredge went back to the car, Sadie stayed to chat with me while I breakfasted. There were no other passengers in the diner just then.

"Sadie," I said, "you believe in me now?"

For answer, she extended her hands on the table, palms upward.

"The signal," she reminded me. "It's the first time we've had a chance to use it."

I remembered. Palms up meant "yes," and palms down meant "no."

"I'm going to ask you something else, too," I said

"The game isn't over yet," she warned me.

"When will it be over?"

"Five minutes after we reach the Los Angeles depot," she replied.

"Sadie Wright," I said firmly, "if we are on time, we'll reach the Los Angeles depot at six o'clock this evening. At five minutes past six I'm going to ask you that question in spite of all the games in the world. I've got a little game of my own—"

"I'm going back to the drawing-room," she said quickly. "Drop in when you're through here."

Ten minutes later I was in the drawing-room, talking to both of them. Sadie had robbed her suit-case for new clothes, and she looked as fresh as any woman on the train, in spite of what she had passed through the night before. She laughed, and sang a bit of song now and then, and smiled at me often. She was beautiful—yes—and I loved her, loved her with my whole heart and soul. I, Professor Herbert Berthold, instructor in science, had dropped my conservative self down the Cañon Diablo. I was young, a boy in love.

Miss Kittredge, I think, realized the situation, for she left us alone whenever she could. She had lunch with us, though, and afterward the three of us sat on the observation-platform as the train rushed into southern California—the land of lands for lovers.

"My duty is not yet accomplished," Sadie Wright said, "but I want to be sure to see you to-morrow, Miss Kittredge. I'll give you my hotel address. I want to know you better. And as for you, Mr. Berthold, you started in to help me away back in Iowa, and you've got to stick by me until I reach the end of my journey."

"Until you reach the end of life's journey," I whispered, as Miss Kittredge turned away.

She did more than turn away; she excused herself and left us alone on the platform. In spite of the beautiful scenery, in spite of the fact that I love it and have always loved it since the time I first set eyes on it, it was not southern California at which I looked for the next hour. It was at Sadie Wright, whom I had not known a week before

The afternoon wore away without incident, except that Sadie Wright wrote a telegram and ordered me to file it at San Bernardino. It said

> R., Kansas City:—All foes disposed of and left behind; expect no more trouble

She did not offer to explain the identity of that mysterious "R.," and I confess that I felt a twinge of jealousy for a second or two. After I had sent the

telegram, we had dinner with Miss Kittredge, for we had decided to eat early, before we reached our destination, and we planned to eat together at a Los Angeles hotel the following evening.

Then the train was at the outskirts of the city, and the journey was at an end. We were in the drawing room, and Miss Kittredge had left to go to her own section. We were not to see her again until the following evening.

"Keep close to me when we get to the station," Sadie directed, "until you hear me tell you that it is all ended. This piece of paper which has caused so much trouble—I am to deliver it to some one who is to meet me here."

The limited pulled into the station and stopped. With a porter in our wake, carrying the suit-cases, we walked through the station to the street. Sadie had directed me to keep a few feet behind her and watch. She seemed to be looking for some one in the crowd.

Then I noticed a man approaching—a man wearing the uniform of the United States navy. There were two others near him, not with him exactly, but near enough to watch over him. He was looking at the passengers as they passed to the street. Sadie was watching him, and he turned and caught her at it. He walked forward and passed her.

"Right!" I heard him say as he passed her.

"Serapis," she answered.

He turned on his heel and lifted his hat to her.

"Canton," he said.

Right—Serapis—Canton! That was the first message I had received aboard the limited! These were passwords which Sadie Wright was exchanging with the naval officer.

They walked a little to one side, and I followed. Sadie handed him the little roll of paper with the big red seal upon it. He glanced sharply at the seal.

"Good girl!" I heard him exclaim. "Have any trouble?"

"Plenty of it," she answered, smiling.

"I'm glad you got through! It may mean a great deal to us — this bit of paper."

"And it may mean more to the mothers and wives and sisters of the country," said Sadie Wright.

Then she turned and called me. I hurried up.

"Captain Serapis," she said, "allow me to present Professor Herbert Berthold. But for his kind offices, I doubt whether I would have succeeded."

Captain Serapis grasped my hand cordially, but the next instant his brow clouded. I had noticed that he gave my hand a peculiar pressure, one that I could not answer.

"Professor Berthold is not one of us?" he said.

"No," said Sadie, laughing again. "He aided me out of pure chivalry. He knows nothing of my mission."

"In that case, I want to shake hands with you again," he said, turning to me. "I'm glad to know we can find a man of chivalry now and then, even in this prosaic day and age."

Then he turned to Sadie. "My report will praise you," he said. "And now, good-by, and the best of luck. I wish there were more like you — who never fail."

He lifted his cap and turned away, and the other two went up to him, one on either side, and so they passed from our sight. Sadie turned and looked in my eyes a moment, then she seemed to give way, to sway toward me, and I put out my arms to catch her. She put her head on my shoulder and cried a little.

"Sadie!" I whispered.

"I'm j-just g-glad," she said—"g-glad it's all over!"

"It's five minutes after six," I said. "I'm going to ask you that question."

"Not before I explain everything to you," she said. "Call a carriage, and we'll go to a hotel. Give me ten minutes to brush up, and I'll meet you in the dining-room and tell you the story."

I hurried to the curb to call a cab.

CHAPTER XXI.

Palms Up at Last!

"NOW," I said, as we were seated in a corner of the dining-room, with no one near, "tell me what I've been helping you do."

"You have been aiding the government of the United States," she said.

"What do you mean?" I asked.

"That I am a secret-service operative."

"You!" I cried.

"Yes," she said, smiling.

"And Clark—and the others?"

"Were free-lance agents, acting for another government. They have a peculiar standing, for whereas agents of their own country have respect and are not without honor in that country, such people as those, who do dirty work for any government that offers them pay, are counted little better than dogs.

"Clark is particularly a cur of the worst sort. He's an Englishman, and once he betrayed his own country; at least, that was the supposition. Now he works for any nation, especially when that nation has not our customs and manners, and cannot therefore have its work done by one of its own men.

"That bit of paper you saw me give to Captain Serapis was very important. I was given it at Washington and instructed to get to Los Angeles as soon as possible and turn it over. I was put upon my honor.

"That means that everything is as nothing when compared to the task in hand. The end must be accomplished, though you wound those who love you, though you take life. There is no rest, no peace—until you have done. You are a slave, a thrall.

"But I'd better go back and explain. Our great fleet, you know, is circling the globe. On the way it visits Japan."

"Ah!" I said.

She smiled.

"You are thinking something that is not so," she said. "You are thinking that there is danger of war between Japan and the United States; that you have just helped me outwit Japan. And it is wrong. Let me tell this story.

"Our fleet visits Japanese harbors. Suppose, as public opinion in regard to Japan is now, that one of our battle-ships should be blown up in a Japanese harbor, as the Maine was destroyed at Havana."

"The people would clamor for war," I said.

"And they'd force the government into it, just as they did when the Maine was blown up," she said. "Naturally, we don't want that to happen. Japan doesn't want it to happen. Don't be surprised when I tell you that a third government is responsible for all the war talk; that this third government would like nothing better than to plunge Japan in war with the United States."

"What government?" I asked.

"That is something I must never tell you," she said. "Now listen to the direct story of the thing. That paper was a map of Japanese harbors, showing every submarine mine. It was obtained recently by our people, and is correct.

"When it was determined to send the fleet around the world, that bit of paper became very important. With that in his hands, the chief officer of the fleet would not anchor any of his battle-ships in a dangerous spot."

"Certainly not," I agreed.

"It is to be supposed that Japanese officials would see to that, anyway, but you never can tell. And this is the reason: Could not this third nation find some Japanese naval officer who has a hatred for the United States and wants to see war, and bribe him to anchor a ship over a mine and afterward sink that ship? You see, the only safe way is for that map to be in the hands of the fleet's commander.

"So an agent was started from Washington with a copy of the map and instructed to take it to San Francisco and turn it over to the admiral in charge. That agent failed."

"Failed!" I cried.

"Yes—failed. His body—he was dressed as a tramp—was found cut to pieces alongside the railroad track in Nebraska. It was supposed some tramp stealing a ride had fallen under the wheels. A few of us knew better.

"The map had disappeared. Three days later a man purporting to be the dead agent reported to the admiral and gave him a map. It was pure luck that we discovered that it was false—so changed that had the admiral anchored his ships by it, every one of them would have been over a mine instead of in safety.

"That incident convinced us that this third government was in reality plotting to plunge the United States and Japan into war by that means. It became imperative for a true map to be given to the fleet's commander. This time every

precaution was taken—and the map was given to me.

"I ran into trouble before I reached Chicago, and had to resort to tricks. It had been planned to have it leak out that the new agent was a man traveling the same route as that taken by the first agent, and then for me to get to Los Angeles as quickly as possible over a route entirely different.

"The cruiser of which Captain Serapis is commander lies off San Pedro. She'll sail before morning, supposedly for Honolulu, and she'll fall in with the fleet off the coast and deliver the map. So you see why I came to Los Angeles. The date of the fleet's sailing couldn't be postponed without causing a great deal of talk, so this was the only way

"When I got to Chicago, I—well, I had to shoot a man. They were on my track—I don't know how they learned the truth, but they had found me. So I played tramp—and met you. You know all that has happened since. You've had a part in it."

"May I ask a few questions?" I said. "I've been writing them down, intending to make you tell me."

"Go ahead," she replied.

"How did you dress so quickly and fit yourself out so soon, in Kansas City?"

"With the help of an agent there, the mysterious 'Mr. R.'"

"Ah! And that first telegram—Right, Serapis, Canton?"

"The password, you see. Put a 'W' in front of the first word, and you have my name; the second is the captain's name; and the third merely completes the trilogy."

"Why did you desert the blind and take to the drawing-room at Kansas City?"

"Everything depended upon my getting to Los Angeles on the limited. I was afraid I'd be put off if I remained a tramp, whereas if I was on the train legitimately, with you to help me, I was fairly safe."

"I see," I said. "And now that I understand the peculiar power which Clark intimated you had, and which you did have—the power to call every peace officer to your aid by showing your credentials, to cause the arrest of Clark and his companions—why didn't you use that power instead of submitting to a reign of terror for several days?"

"Easily explained," she said. "We work in secret. If a secret agent gets into trouble, he has to get out of it, for his government cannot appear officially in the matter. Also, it was necessary to keep everything as secret as possible.

"To call for help would have been to betray my identity to more people, and each time you betray your identity you run an added risk of failure. To cause the arrest of Clark would have been to betray the whole affair, possibly.

"Then the secret workings of this nation in its relations with Japan would have come out, the third government would have become aware of its standing, strained relations would have developed, and though the culmination might not have come for a score of years, yet it would have been sure. Governments do not forget."

"But Clark started to have you delayed by having you arrested for that Chicago shooting," I said. "After failing the first time he did not try again."

"Perhaps he did," she said, "and perhaps the Chicago police were told something by the Federal authorities which caused them to stop all pursuit of Sadie Wright."

"But when he tried the first time—why didn't you submit to arrest and prove your identity instead of playing that trick on Miss Kittredge?"

"Because any delay would have been dangerous," she said. "I had given my word of honor to get to Los Angeles on the limited. To submit to arrest would have delayed me, although it would not have caused me annoyance after I had shown my credentials. That's why I took chances on this trip that I wouldn't have taken on any other—it was a case where time meant everything.

"I'm sorry I had to play that trick on Miss Kittredge. But though she hated me for it a little at first, she thought it out and knew that Clark must have told the officer she was Sadie Wright. So when she caught the limited she was really more my friend than Clark's. She couldn't forgive the crudeness of a companion who would give her the worst of the game—no more could I.

"And then Clark began to taunt her,

telling her she never accomplished anything, and aroused her professional jealousy. Then he went a step further and added personal insult—and she came over to us. She doesn't belong to Clark's class. She's really a capable agent. And she's quit the game now."

"She told me," I confessed, "that this was her last case."

"And it is mine," said Sadie Wright. "That was the understanding when I left Washington. That's another reason why I wanted to win—it would have been dreadful to have left the service in disgrace. The service never forgives failure, you know. Nothing on earth can excuse it."

"You are well out of such a profession," I said. "It's a great game, perhaps, and necessary—"

"It is the game of games," she broke in, her eyes glowing. "For instance, I have kept two nations from war, prevented untold slaughter and heartbreak, and held back two nations from indescribable suffering that a third might gratify its greed without cost. It is a great game."

"But you're ready to quit?" I said, more an assertion than a question.

"Yes—it's no game for a woman, if she wants to remain a good woman. And every woman owes it to her country to be that. There is a higher patriotism in being a clean, honest woman, and demanding that those around you be clean and honest, than in fighting battles or outwitting the agents of other governments."

She turned her head to one side as she spoke, and there was the ring of sincerity in her voice, and the light of it in her eyes. I knew then that I had not judged her incorrectly—that she was worthy of the help I had given her, worthy of my friendship and love, of my heart's devotion.

She turned toward me with a little sigh.

"And that is all," she said.

"Not all," I answered, reaching across the table and taking her hands in mine. There was no one near, and, anyway, a screen hid us. "You haven't told me whether you love me, whether you'll marry me, whether you'll give me the right to protect and help you all the rest of your life. Tell me, Sadie Wright! You'll marry me? You love me? Must I wait any longer?"

For a moment she looked me straight in the eyes. There was just a hint of tears in her own. Then she withdrew her hands from mine gently, smiled that happy smile of hers, blushed rosy-red, and put her hands on the table again, palms toward me. I sprang from my chair and crushed her in my arms, with my lips on hers.

Palms up meant "yes!"

(The end.)

A TIE MADE OF CORN-STALKS.

Said To Last Longer Than Wood, Costs Only Half as Much, and Supply Is Inexhaustible.

A NEWSPAPER clipping of some months ago informs us that a Salt Lake inventor has patented a railroad-tie made of corn, cane, broom, and cotton-stalks preserved in a solution of hydrocarbons and lime. The solution is said to make the tie indestructible. Part of the stalks are made up into pulp, and this forms the wall or casing.

The tie is cast in steel molds, under a very high hydraulic pressure, and comes out in solid blocks, which can be worked in the manner of wood. It is claimed that this product will hold a spike as well as wood, and will not bend, rack, or split. It can be made for about half the cost of wood ties, will last many years longer, and is declared by its inventor to be water and weather proof.

According to the report, the Rock Island, Burlington, Denver and Rio Grande, and Oregon Short Line are negotiating for the right to use the process, although whether in experiments or actual practise is not stated.

ON THE EDITORIAL CARPET.

If You Don't Like the Way This Train Is Being Run, Rise Up in This Department and Swing Us Down.

WAIT FOR JUNE.

OF course you don't really have to wait with folded hands; we'll guarantee to provide you with plenty of good reading before June comes round. But unless our hopes are being falsified, each month is a little bit better than the one that went before. Therefore we say wait, and here are a few of the reasons

First out in the June number will be a brand-new kind of article. Hitherto we have dealt exclusively with the trials of travel and traffic as we find them on the railroad lines But not all the freight, human and senseless, that is carried over the great systems of the country originates within our borders. Every great ship that comes throbbing across the Atlantic brings its quota of passengers and freight to swell the railroad business of the United States.

Day and night a watcher sits in a great tower on Sandy Hook, scanning the horizon for signs of a sail or smoke, and telegraphing the arrival of each incomer to the waiting city. The article that we expect to lead off with will probably be called WATCHING THE SHIPS COME IN, and will describe the work of these men who sit at the sea's edge and flash the news of the incoming liners to those who wait with train and cab and dray to carry away the freight, living and inert.

Another new field into which we shall poke our pilot in June is the work of the traveling auditor. Don't know what he does, you say? Bet you do if you're a station-agent. Otherwise here's the chance of your life to find out. Read the TALES OF A TRAVELING AUDITOR

Then there will be a TRUE STORY which shows the sort of treatment that a green operator might expect in the early days when the West was very Western indeed JOHNSON'S CAREER AT HEDGES is typical of the sort of reception that more than one man received in those hilarious, full-blooded days, only Johnson happened to take it differently from some

Our series of course will continue to run according to the time card. Gilson Willets tells some tales of the Boys of the Northern Pacific in his RIDING THE RAIL FROM COAST TO COAST. Since we have located a railroad, built it, and organized a Maintenance of Way Department in our HELP FOR MEN WHO HELP THEMSELVES, the next step will be to show how a railroad is operated. That is what we expect to do in the June number.

In THE STORY OF ELECTRICITY, which many readers have praised and only one has criticized, we shall have something to say about the use of the weird fluid—if that is what it is—in transportation. Getting close home, isn't it? Well, you know there are foolish people who say that in a generation or two all the transportation work of the world will be done by electricity. Of course we don't know, but the chance is good enough to make it worth your while to read this article

There will be some more OBSERVATIONS OF A COUNTRY STATION-AGENT, barring always the exigencies of "make-up" that no man can foretell, and unless our plans are radically altered, we expect to tell a few yarns of the PERILOUS DAYS ON UNION ARMY RAILROADS

So much for the special articles. The fiction we have always with us, and it's getting better every month, if we do say it ourselves as shouldn't. However, we don't write it, so there doesn't seem to be any good reason why we shouldn't praise it if we want to, and the fiction deserves it, which the same it does

In June we expect to return to our old friends Honk and Horace, the creations of Mr. Harte's nimble brain. However, the story is not so much of these two worthies as of a friend of theirs, Fuzz Watts, he who pulled the train the night of the hold-up, you remember. BUTCHER SIMPSON OF TRENTON, N. J., is a plain train-butcher, but he has his moments of romance and his humble heart responds to the thrill of the tender passion. Altogether he is an amusing and very human character. Besides, this is the first fiction we have published in which a train-butcher, a member of that fast-vanish-

ing tribe that was once as numerous as the sands of the sea and almost as persistent, has had a leading part

A new contributor will tell the story of the CANNING OF SPIKE MALONE, being the true inside account of the severance of relations between Spike and the great Santa Fe Spike tells the story. In THOMAS TUTTLE'S TRUNK we are to have another of Edgar Welton Cooley's humorous yarns of the predicaments of hot-headed passengers

Still another new man is to appear among our fiction writers in June. This one offers some graphic pictures of life on the West Coast of Africa, a scene that lies "far from this our war," and is for that reason all the more interesting as a slight change of diet

Instead of one only, as usual, we expect to run out the first sections of two new serials in June. DARE OF DARLING & CO., by William Wallace Cook, an old friend of yours, will run in four sections, each one of which is packed full of breathless description of adventure among the burning pine-woods of Michigan. THE COURAGE CLUB runs in five sections, and each section is practically an independent train running under orders of its own. Those of you who have been especially attracted by RICHARD HUGHES — RAILROAD DETECTIVE, or AT BAY ON THE LIMITED, should not fail to read this series, as it is by the same author as those other old friends.

And that is the time-card for June Looks rather good to us; you may think differently, but wait for it, anyway.

HERE IS "KITTY WELLS."

SOME time ago one of our readers asked for the words of "Kitty Wells." So many of you have responded to our request that we cannot thank you by name. All that we can do to show our appreciation is to print the words of the song and express our deep debt to the many readers who have taken time and trouble to supply us with them.

You ask what makes this darky weep—
  Why he, like others, am not gay?
What makes the tear roll down his cheek
  From early eve to break of day?
My story, darkies, you shall hear,
  While in my memory fresh it dwells;
'Twill cause you all to drop a tear
  On the grave of my Sweet Kitty Wells.

CHORUS

While the birds were singing in the morning,
  The myrtle and the ivy were in bloom,
The sun from the hilltops was a dawning,
  'Twas then we laid her in the tomb.

I never shall forget the day
  That we together roamed the dell;
I kissed her cheek and named the day
  That I should marry Kitty Wells;
But death came to my cabin-door,
  And took from me my joy and pride;
And when I found she was no more,
  I laid my banjo down and cried

I sometimes wish that I was dead,
  And laid beside her in the tomb;
The grief that now bows down my head
  Was silent in the midnight gloom;
The spring time has no charms for me,
  Though flowers are blooming in the dell,
For their bright form I cannot see;
  'Tis the form of my Sweet Kitty Wells.

MATTER FOR PRAISE AND BLAME.

"YOU can't fool all the people all the time," said Abraham Lincoln. True enough, although we never tried it, even for a little while. It's quite as difficult to please all the people all the time. What is one man's meat is boarding-house breakfast to another, and Monday morning breakfast at that. For example, one friend assures us that the March number is the poorest we have yet published, although he did not find it altogether uninteresting. Several others have taken occasion to tell us that it is the best ever and shows how rapidly we are going ahead. So there you are. What is a poor editor to do?

One of the most welcome letters which we have received in a long time came from England. By the way, while we think of it, it's surprising how much interest there is in American railroads on the part of foreigners. Hardly a week passes that we do not receive letters of praise, inquiry, information, or all three, from some distant corner of the earth. But, as we were saying, our friend from England says:

I have but little doubt that letters appreciative of your magazine pour into your offices daily, and with good reason. I propose, therefore, to add one more to the list, and hope that an Atlantic voyage will in no way affect its reception.

The contents of every number of THE RAILROAD MAN'S MAGAZINE, when published in England, I devoured eagerly on the day of publication; and it was the greatest disappointment to me when I heard that the authorities had seen fit to withdraw it from the English market. That, however, was a difficulty which was easily surmounted, and now every number finds its way into my hands and is perused as keenly as before

As a "railroad enthusiast," I find the magazine absolutely invaluable, as it keeps me acquainted with railway progress in the United States, a country I have not yet been

sufficiently fortunate to have visited. The fiction is decidedly bright and fascinating, and I know of no more interesting magazine. I often wonder why it failed to "take on" over here. Perhaps it hardly bore sufficient reference to British practice (pardon my English spelling)

Forgive me, however, if I bring up ancient history by referring to a statement which appeared in your number for August last. Your correspondent, Mr. Rogers, says (p. 551) that the record of June 9, 1904, run under unfavorable circumstances on the Great Western, was made by engines "built on lines laid down by American practice," thereby giving his fellow countrymen an encouraging pat on the back for the feat Surely he was misinformed.

The engine which took this train from Plymouth to Bristol was of the "city" class, and can only claim an American relation in the shape of its boiler. It had, however, no steam dome or perforated pipe, but the steam was taken directly from the end of the steam-pipe, which opened over the copper fire-box. The fire-box was of the Belfaire type. The engine which continued the journey to London had but a single pair of driving wheels of ninety-six inches in diameter, a distinct departure from any recent American practice. In neither case was there any compounding of cylinders, which were situated inside the steel-plate frame, while both engines were extremely light

Only the former, by reason of the coupling of its driving-wheels, can be compared with American designs of that date. Yet the total performance of the single driver was superior, London being reached from Bristol (118.5 miles) in under 100 minutes, averaging 71.4 miles per hour, while the coupled engine took 122 minutes to cover the 129 miles from Plymouth to Bristol, a distinctly poor performance in comparison. On the other hand, it must be admitted that this engine covered the 70.5 miles from Exeter to Bristol in 64.25 minutes, which (if a track-delay be allowed for) works out at 71.9 miles per hour. Still, the single driver maintained over 80 miles per hour for 40 minutes, never sinking below that speed, and so appears to me to have accomplished the more noteworthy feat, though, as regards actual maxima, the coupled engine takes first place, attaining the authenticated speed of 102.3 miles per hour.

Forgive this little defense of the British engineer.

Incidentally, it might interest your readers to know that, during the last sixteen months, British railways have not killed a single passenger—no mean performance considering that they convey nearly a hundred million per month

Pretty good that, isn't it? We wouldn't mind having a good long talk with that chap. He evidently knows a little something about English railroads—beg pardon, railways—and he could probably ask some searching questions about our own systems.

Speaking of foreign parts here is what a friend in the Transvaal, an employee of the Central South African Railways, thinks of us

By the extracts you print in this month's RAILROAD MAN'S MAGAZINE (January) it is evident that you appreciate letters from your readers. Let me, therefore, add my congratulations on the success of your endeavor to provide a real railway man's magazine. The general run of railway literature is "all work and no play." You have hit the happy medium of work and play combined, and even the educational articles are written in such a manner as to make them a real pleasure to read. As a rule, one finds such reading a bit dry.

So much for the news from abroad. We cannot forbear quoting a little from a whole-souled letter written by a Montana friend What he likes he likes without modification or reservation, and he doesn't mind saying so. Says he:

I take the liberty of writing a few lines, and also of expressing my views in regard to your splendid magazine that I have been reading for over a year now. I must admit that I was surprised to find so many objections by swell-headed readers about the way the stories appear. I, for one, can see no fault whatever in any of the magazines that I have read.

I note where one reader was complaining about the Richard Hughes detective stories. I liked them all right, and wish they would appear again. There is one department in this magazine that I like especially well, and that is BY THE LIGHT OF THE LANTERN. The answers which appear are short, but to the point.

Praise with a little acid dash of criticism is found in a letter received from a railway postal clerk recently. We will quote the letter first and comment afterward

I have been reading THE RAILROAD MAN'S MAGAZINE for some time, and think it the best magazine published. I note you give space every month for some one to register a "kick," and hope you will give me an opportunity along this line

I notice that only now and then you publish anything concerning the hardest-worked men, and the only men who have no chance whatever in case of a wreck—the railway postal clerks.

In fact, if my memory serves me right, "Santa Claus on the Rail," in your December issue, is about the only article you have published so far that would inform the reader that the railway postal clerk exists.

There is not a single employee on a train who does not have time enough from his work to look ahead of the train now and then except the mail clerk. He usually performs his work in a half rotten car (or

death-trap), and never knows anything of a wreck until it's over—if he still lives.

I read every month of the "brave engineers," but in my opinion the engineer is always in the safest place, because he can always see what is going to happen and jump, if he wants to do so.

If you would assign such a writer as Mr Willets to cover this subject, or, at least, to write one article concerning the real duties of a railway postal clerk, I think you would be very much surprised at the result.

Our friend is mistaken in his hypotheses. In the December, 1906, number of THE RAILROAD MAN'S MAGAZINE he will find an article on the MAGICIANS OF THE MAIL TRAIN which is a very full description of the work of the men who sort the mail on the flying cars. Moreover, we have had numerous other brief references to various phases of their work in later numbers. Then, of course, there is the article to which our friend refers published last December. So we do not feel as conscience-stricken in this matter as we might.

NEWS FROM GUATEMALA.

NOTHING is more difficult than the obtaining of accurate information about railroad work in distant countries. Reports are frequently conflicting and unreliable, official statements are few and far between and not always accessible, and personal accounts are often colored or biased by experience. Therefore, we hail with particular joy this apparently unprejudiced account of one man's experience in Guatemala, the scene of some of the present construction on the projected Pan-American Railway:

In a recent issue of your magazine I notice an article relative to the near completion of the Pan-American Railroad through to Guatemala.

Some one has misinformed you. The lowest point reached by the Ferrocarril Pan-Americano (Pan-American Railroad) is a town with the unpronounceable name of Pijijiapam, forty kilometer leagues (about one hundred miles) north of the Guatemala line. The northern terminus is San Geronimo, a point on the Tehuantepec National Railroad. After this much was completed, the Mexican government refused to allow them to carry passengers on account of the flimsy construction of the road-bed and the bridges. I came up from Guatemala, where I had railroaded twelve years, by that route about six months ago, and would rather undertake a trip around the world than try it again.

I left Guatemala City over the Guatemala Central one Sunday afternoon, and got to Escuintla, the end of the first division, at dark. Next morning we left Escuintla at 10 A.M., and got to Mazaltenango at 6.30 P.M. This is the end of the Central, and here they connect with the Ferrocarril Occidente (Western Railway). This brought me to Retalelahua at the end of the third night. Here I waited two days for a passenger down to Champerico, on the Pacific.

After arriving at Champerico, I found that the only method of getting to Ocós, the next railway point north, was to walk up the coast. This occupied two days, during which I was devoured by mosquitoes, soaked by rains, frightened by a tiger, and had to cross two rivers in which sharks predominated over all other fish. Arriving at Ocós, and after waiting for two days for the train, which only ran twice a week during the rainy season, I went up the Ocós Railroad as far as Ayutla, and there was refused permission to cross the river into Mexico because of having several gold pieces in my possession. Gautemala law does not allow any one to carry gold into Mexico.

A Chinese banker there was twelve days finding enough silver to exchange for my gold. No mules being obtainable, I walked two days to Tapachula, the chief commercial city of southern Mexico, and there waited twenty-one days for mules. The natives there do not raise mules, and the only ones to be had are those brought down from the north by chance travelers. After obtaining the mules, I traveled five days to Pijijiapam, the southern end of the Pan-American. Here I learned that an engine had been sent north several days before, and, as the telegraph line was out of commission, the officials were afraid to send another out, for fear of a collision.

After five days here, a letter arrived, saying that the engine had broken her Walschaert valve motion (monkey motion, in railroad parlance) and was stuck eighteen kilometers south of San Geronimo. This letter had been sent from San Geronimo to Salina Cruz, and had been brought from there down the coast to San Benito by steamer, and across the country by mule-back messenger. One day's run brought me to San Geronimo, thence over the Tehuantepec National Railroad to Santa Lucrecia, where I took the Vera Cruz and Pacific and traveled two days and one night to Vera Cruz, and thence one night's ride in a Pullman—the first Pullman I'd seen for twelve years—over the narrow-gage Interocianico Railroad to Mexico City.

Thus, I occupied sixty days getting to the city of Mexico from Guatemala City, when, by going down from the latter place to Puerto Barrios and taking a fruit-steamer, I could have made the journey in about seven days. If the Pan American Railroad is ever built in Guatemala City it will have to build an entire new line, as the Ocós Railroad is a narrow gage, owned by German coffee-planters to bring their product down to the port. They had two thirty-ton engines, but one of them was on blocks in the Ocós shops, when an earthquake came and tipped it over, and it was never put up

again, and the salt water ate the boiler on the side next to the ground

They also have a little switch-engine, but one cylinder-head has blown out, and it is comical to see the engineer and fireman behind pushing it off center. They use it for pulling little cars of coffee from the storage warehouses to the steamer loading place. The road is laid on thirty-two-pound iron, very badly worn. The Western Railroad is another coffee road, which runs from the port of Champerico to San Felipe, sixty-one miles, with a branch of twelve miles from Mulua Junction to Mazaltenango. This is also a narrow gage, but well kept up, with good engines. The Guatemala Central, from Mazaltenango, is of the same width as the Western, and runs to Escuintla, where it connects with its main line, from Guatemala City to Puerto San José, on the Pacific. Neither the Central nor the Western were built for any kind of heavy traffic, both roads having curves and grades around and over which it is impossible to pull more than four cars. The mountains around Guatemala City make the building of a standard-gage road a very expensive undertaking; and after it is built, I don't see what the revenue would come from.

In my opinion, the all-rail route will be completed about the time the Panama Canal is open for ships; that is, a long time after this generation has passed away.

OLD AND NEW RECORDS.

TELEGRAPH operators have ever a keen eye for anything that savors of the marvelous or unusual in speed or accuracy among the exploits of their brethren of the key and sounder. Information has reached us recently that two good friends of this magazine, Mr. McGetrich, Western Union operator, Trenton, New Jersey, and Mr. H. C. Pearson, Western Union operator, 195 Broadway, New York, recently made a record on a single wire, handling eighty-one messages an hour, all ten words or over. Both men used the Martin vibroplex.

Our reference in February to the wonderful work of Peter A. Foley, the deaf operator of Portland, Maine, has moved a correspondent to cite the case of Mr. Sam Hoffman, one of the old-timers, as being quite as wonderful as that of the Maine man. Although stone-deaf, Mr. Hoffman held down a key at Petersburg, Virginia, throughout the Civil War, and was the equal of any of his fellows of that day.

After the war he was manager of the Western Union office in Mobile, Alabama, and not even the rising generation of lightning-jerkers could come too fast for him. All his receiving was done with his hand on the sounder, his sense of touch being so delicate that he could take the fastest message without a break and give his O.K. at the end without hesitation.

A POEM WITHOUT AN AUTHOR.

THE following verses have been sent us by one of our readers who confesses his inability to remember the name of the author, if indeed he ever knew it. As the address of our corrresponden did not appear in his letter, and the postmark on the envelope containing it was so blurred as to be indistinguishable, we are somewhat at a loss to locate the origin of the verses, either as to writer or sender. However, here they are; some of you may recognize them.

There are heroes famed in story, rightly
famed for deeds of arms;
Men who fought their country's foemen,
and in sudden night alarms
Have rushed out to shots and shouting in
the smoke and reek and dark,
Never pausing, never heeding, offering themselves a mark;
Going where their duty called them in a
nation's game of war;
Finding death, or finding glory, never questioning what for.

But peace has its greater heroes, men of
throttle and of wheel;
Men who, crouched in their cab-windows,
drive their panting steeds of steel
Over moor and fen and mountains, dashing
over trestles high,
Thrown across deep cleft and chasm, like
mere cobwebs 'gainst the sky;
On whose nerve hangs lives of hundreds as
they leave the station-light,
And, with straining of steel sinews, plunge
afar into the night.

Men who, facing swift disaster, are keyed
up to such a height
That each nerve and joint and muscle
springs to do the thing that's right;
Men who, when they can't avert it, go to
death clear-eyed and brave,
With strong hand closed on the throttle in
a last attempt to save.
Hope of glory or of pension is not theirs,
no more than fear;
Aye, indeed, peace hath its hero in the railway engineer

Not the least gratifying part of this affair is our correspondent's statement at the end of his letter that he has been reading THE RAILROAD MAN'S MAGAZINE since 1907, "and there is not any like it for truth and humor."

MORE SONGS THAT ARE WANTED.

STILL they come, the inquiries for the old songs and poems that have been lost but not forgotten. From Oregon comes a

request for "My Dad the Engineer." We do not know it and are forced to fall back on the rest of you, as so often before, for help in this time of need

Another reader wants to know if any of the old time telegraphers can help him out with the words of a song whose refrain, as nearly as he can remember it is, "The man who sings the lightning, is the man who runs the train."

Finally, South Dakota proffers a request for a song that runs something as follows:

Said the big, burly bum to the farmer's son:
"Will you come a hiking to the Rock Candy Mountains?
The birds and the bees in the cigarette-trees,
And the lemonade-springs in the Rock Candy Mountains?"

NOT AS BLACK AS PAINTED.

A CANADIAN reader rises to deny some statements made recently regarding the opportunities for high-class railroaders in the western part of the Dominion. His letter will speak for itself:

I wish to take exception to a statement made in THE RAILROAD MAN'S MAGAZINE for March by one J. D. of Moose Jaw, Saskatchewan. From what is printed, it would appear that J. D. states that work and promotion are not very good in that country. From my own experience I think it is just the contrary. I have been working on the same road at Medicine Hat, Alta., which is two hundred and fifty-seven miles west of Moose Jaw, for the past six and one-half years, and have only fired three years of that time.

I was promoted just as soon as I was eligible for it, and have had all the work I could do running an engine ever since. Promotion has had a slight check during the past year, owing to the fact that on the road between Moose Jaw and Medicine Hat the grades have been cut down so that engines formerly hauling 1,025 tons now haul 1,700 tons of freight. Also, the recent year of commercial depression had a bad effect on us, but not to the same degree that it had on other parts of the same road, as over our division we haul mostly coal from the Crow's Nest country, which supplies nearly all the northwest portion of Canada.

Against the slight set backs mentioned we have had two new passenger-trains put on and over two hundred miles of new road built and opened for traffic, while another new Trans-Canada train is scheduled to be put on in the month of June, this year. The G. T. P. has opened six hundred and sixty miles of new road recently, and as much more will be opened this coming season.

Taking everything into consideration, I do not know where there is a better field for locomotive firemen than in the Canadian Northwest. Wages run from $2.80 to $3.40 per hundred miles, the average being about $3.10 or $3.15, and the conditions of service are very good, firemen having no cleaning to do at all. All other lines of railroad work are very good in that country.

Trusting that this may do something to counteract what I consider a false impression of labor conditions in our country, I will close by saying that I think the March issue of your magazine is the best yet. I am a constant reader of it, and wish you every success in the future.

A GENIAL KICKER.

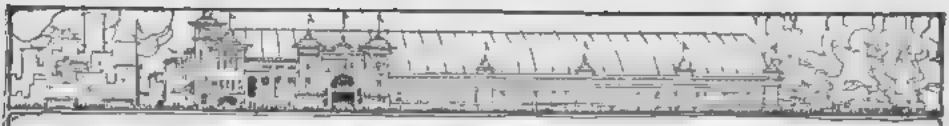
THE man who wants something, but cheerfully tells you to take your time about it or not to mind at all if it isn't convenient, is often much more likely to get what he wants than the fellow who flies into a rage because it isn't handed over on the spot, and proceeds to break the furniture to show how much in earnest he is. Therefore, we do not mind saying to the man who wrote the following letter that if he doesn't have his wish, it will be because we can't find what he asks for anywhere within our reach. And here is the letter:

I have been taking your RAILROAD MAN'S MAGAZINE for the past eight months. I must say that it is a good one. I have read stories in it from president to section-man, but I am sorry that I have never read anything about steam-shovels or men that operate them. Of course, I don't want you to think that I am an agitator; I'll read the magazine anyhow, if there is never a story about steam-shovels in it.

I am a man in the shovel business myself, and I would like to read about them, but never mind. The stories look good to me as they are.

WHERE IS FLOYD LASH?

WE have received an inquiry as to the whereabouts of Floyd Lash, member of No. 346, B. of R. T. Our correspondent wishes to notify him of the death of his son, and to request that he communicate with his family.



The Railroad Man's Magazine

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FOR

VOLUME VIII

February to May, 1909

NEW YORK
THE FRANK A. MUNSEY CO., PUBLISHERS
175 FIFTH AVENUE
1909

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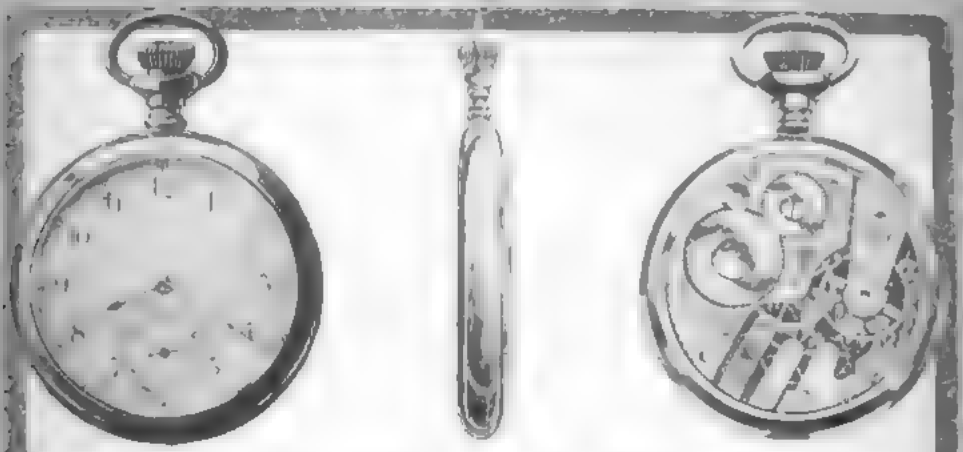

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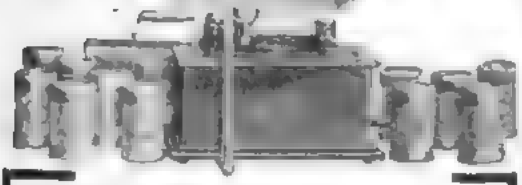

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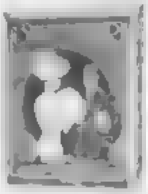

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[illegible] at the same price WHOLESALE Jewelers must pay

$2.50 a Month.

[illegible] you buy for cash.

POST YOURSELF!

[illegible] Before [illegible]

Get the Burlington Watch Company's

FREE WATCH BOOK

[illegible]

FREE BOOK COUPON

BURLINGTON WATCH CO.
Dept. 1105
Millard Sta.
Chicago
Ills

Burlington Watch Co., Dept. 1105, Millard Station, Chicago, Illinois

[illegible] your [illegible] Watch Book, and particulars of your no-trust offer.

Name [illegible]

No letter necessary, coupon will do

New Invention!

Nothing Else Like It

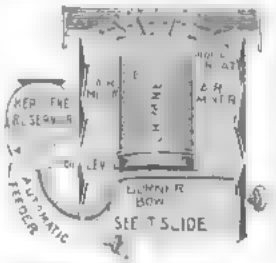
THE MOST WONDERFUL STOVE EVER INVENTED

Consumes 395 Barrels of Air to One Gallon Common Kerosene Oil

Causing Great Excitement Wherever Exhibited

The [illegible] Uses 395 barrels of air while consuming one gallon of oil [illegible] ONLY FREE FUEL IS AIR [illegible]

Harrison's Valveless, Wickless, Automatic Oil-Gas and Air-Burner Stove



Section of Generator.

[illegible] tion perfect **to operate** turn knob [illegible] oil runs [illegible] mantle [illegible] generates [illegible] gas [illegible] burns [illegible] common [illegible] oil consumed. **That's all.** It [illegible] No [illegible] No [illegible] No

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—Selling Plans
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Boys, how do you like my suit? See the *style?* Your tailor would ask $30.00 for such a suit; I'll make it to your measure for $15.00. Let me be your tailor. I positively guarantee correct style, fit and workmanship, at $12.50 to $25.00—fine custom-made suits at less than ready-made prices.

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RG

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Name _____

Employed by _____ R. R.

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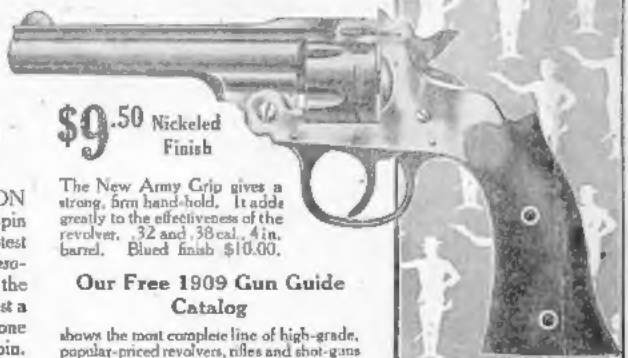
RH

The Great Fault With the Ordinary Revolver

is its uncertainty—*not* when you want to use it, but when you *don't*.

The HOPKINS & ALLEN Triple (Trade) Action (Mark) SAFETY POLICE

shoots hard and true when you want it to; when you don't, *nothing can discharge it.*



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